



ARCATA GENERAL PLAN

[A Compilation of the parts of the Arcata General Plan]

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Revised April 17, 1996

THE ARCATA GENERAL PLAN
LIST OF PARTS

THE FOLLOWING PARTS MAKE UP THE ARCATA GENERAL PLAN:

PART OR GROUP OF PARTS	DATE ADOPTED OR AMENDED	RESOLUTION NUMBER
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THE FOLLOWING DETACHABLE MAPS ARE PART OF THE ARCATA GENERAL PLAN:

MAP NAME	RELATED ELEMENT OR PART	PLATE
1985 GENERAL PLAN & ZONING LAND USE MAP (Map 2 is in text)	INTRODUCTION	Map 1
COASTAL GENERAL PLAN & ZONING LAND USE MAP	COASTAL LAND USE ELEMENT	
FAULT MAP	SEISMIC SAFETY ELEMENT	Plate A
LIQUEFACTION POTENTIAL MAP	SEISMIC SAFETY ELEMENT	Plate B
SLOPE STABILITY HAZARD MAP	SEISMIC SAFETY ELEMENT	Plate C
MATTHEWS DAM FAILURE INUNDATION MAP	SEISMIC SAFETY ELEMENT	Plate D
Ldn NOISE CONTOURS (in A-Weighted Decibels (dBA))	NOISE ELEMENT	

THE FOLLOWING APPENDICES ARE PART OF THE ARCATA GENERAL PLAN:

APPENDIX LETTER & NAME	RELATED ELEMENT	DATE ADOPTED
B: GENERAL PLAN LAND USE DESIGNATIONS	INTRODUCTION	03/02/88
C: CRITERIA FOR DESIGNATING HISTORIC STRUCTURES	I. URBAN DEVELOPMENT AND COMMUNITY DESIGN	03/02/88
D: POPULATION PROJECTIONS	<i>Specific Element/Chapter undetermined. Included with 1980 update document</i>	not known
E: DESIGN CRITERIA FOR NEW STRUCTURES IN HISTORIC DISTRICTS	I. URBAN DEVELOPMENT AND COMMUNITY DESIGN	03/02/88

Revised April 17, 1996

APPENDICES, CONTINUED:

APPENDIX LETTER & NAME	RELATED ELEMENT	DATE ADOPTED
G: PERFORMANCE STANDARDS FOR NEW INDUSTRIAL DEVELOPMENT	<i>Specific Element/Chapter undetermined. Included with 1980 update document</i>	12/17/75
H: PROPOSED DEVELOPMENT REVIEW CRITERIA FOR URBAN EXPANSION AREAS	<i>Specific Element/Chapter undetermined. Included with 1980 update document</i>	12/17/75
J: URBAN SERVICES BOUNDARY	I. URBAN DEVELOPMENT AND COMMUNITY DESIGN	03/02/88
K: ARCATA SCENIC ROUTES	II. CONSERVATION V. PUBLIC FACILITIES	11/16/89
L: RECOMMENDED UTILITY UNDERGROUNDING DISTRICTS	<i>Specific Element/Chapter undetermined. Included with 1980 update document</i>	12/17/75

Revised April 17, 1996

RESOLUTIONS ADOPTING PARTS OF THE ARCATA GENERAL PLAN:

RESOLUTION NUMBER	DATE ADOPTED	ELEMENT OR PART ADOPTED
956-30	03/03/96	ARCATA CREEKS MANAGEMENT PLAN
945-26	11/16/95	COASTAL LAND USE PLAN AMENDMENT
945-25	11/16/94	PARKS AND RECREATION ELEMENT
923-32	01/06/93	HOUSING ELEMENT
890-28	11/15/89	II. CONSERVATION; APPENDIX K
890-04	09/20/89	NOISE ELEMENT
878-52	03/02/88	INTRODUCTION [and] I. URBAN DEVELOPMENT AND COMMUNITY DESIGN
878-31	12/02/87	SEISMIC SAFETY ELEMENT
878-18	10/21/87	COASTAL LAND USE ELEMENT
856-23	11/06/85	ECONOMIC ENVIRONMENT
790-42	02/20/80	V. PUBLIC FACILITIES
756-14	12/17/75	1975 ARCATA GENERAL PLAN APPENDICES G, H, L



Arcata, California General Plan

Five Year Update 1985

Sections amended:

Introduction	3/2/88
Urban Development and Community Design	3/2/88
Seismic Safety	12/2/87
Economic Environment	8/28/85
Residential Environment	8/28/85
Conservation	11/15/89

**** INTRODUCTION ****

This General Plan, consisting of a general plan text and accompanying general plan map, is the final report produced in the Arcata General Plan Program. This General Plan was formally adopted by the Arcata City Council December 17, 1975, following public hearings held by both the Planning Commission and City Council. The General Plan was subsequently reviewed in its entirety in 1980 and 1985 and updated. Earlier drafts of this Plan were also reviewed by the General Plan Development Committee, the Housing Element Committee and the Redevelopment Advisory Committee, public officials and citizens of Arcata. The final General Plan incorporated the comments and suggestions of these various groups and individuals to the greatest extent possible.

The other reports which have been produced in this program, and upon which this General Plan is largely based, are as follows:

Preliminary General Plan, prepared by Duncan and Jones, Urban and Environmental Planning Consultants, September 12, 1975.

Opportunities, Constraints, and Needs, prepared by Duncan and Jones, April 10, 1975, (with subsequent additions).

Public Safety and Seismic Safety Elements, Policy Report and Technical Report, prepared by Envicom, Inc., June 1975.

Noise Element, prepared by City staff, April 1975.

Open Space and Conservation Element, June 1972, amended May 1973.

Physical Design Recommendations for Achieving Community Social Goals, prepared by Sedway/Cooke, September 1976.

Parks, Recreation, and Open Space Master Plan, prepared by Saito/Sullivan Associates, January 1979.

Coastal Land Use Element, prepared by Environmental Analysts, Inc., April 1980 and updated by City staff in 1987.

Housing Element Technical Background Report, City Staff, 1985.

Economic Environment Technical Report, City Staff, 1985.

A Conceptual Open Space Plan for Arcata, California, Ann Christensen, 1985.

Noise Element, prepared by Rising Sun Enterprises, September 1985.

Seismic Safety Element, prepared by Northern Geotechnical Incorporated, May 1987

Open Space and Conservation Element, prepared by City staff, (Agricultural and Forest Hillside lands, March, 1989; Air Quality and Views and Vistas, September 1989; Streams, October, 1989; Wetlands November, 1989;

** WHAT IS A GENERAL PLAN? **

This General Plan is a composite of many policies, programs and intended actions to govern the future physical development of the City of Arcata and the surrounding Planning Area. The policies are designed to preserve and enhance existing development, and to provide for orderly and appropriate new development to meet the needs of the area over the next twenty years. Although the Plan covers the period from 1985 to 2000, the emphasis in this planning document is on action which should be taken in the more immediate future. Accompanying the set of policies and implementation recommendations included in this report is a General Plan Map, which has been prepared in two sections: one for the City of Arcata and its immediate vicinity (Map 1), and one at a smaller scale for the entire Planning Area (Map 2). The Planning Area Map is presented on the following page.

Several criteria have been applied in the preparation of this General Plan which serve to distinguish it from many other General Plans. First, it has been recognized that to be effective the Plan should be prepared in a form which readily permits supplementation and amendment. It is hoped that the format, and the presentation on a chapter by chapter basis will serve this purpose, and avoid the monolithic take-it-or-leave-it character of many general plans. Second, to enable the Plan text to be capable of adoption and execution as a legislative document, to the greatest extent possible it has been purged of narrative text, is concise, and addresses only the policies to be followed and the implementation efforts these imply or require. Thirdly, to a great extent the policies have been formulated from the standpoint of what is achievable and feasible, now or in the relatively short-term future. While this may diminish the visionary or utopian character of the Plan to some extent, it is increasingly less acceptable to set planning objectives or policies which are not implementable from a practical standpoint or which have only a decorative purpose. In some instances the expression of the policies has involved difficult trade-offs between conflicting purposes or values. The results are not likely to please everyone, and in some cases represent the apparently least undesirable of several unsatisfactory alternatives.

-
1. The Planning Area is bordered by the Pacific Ocean on the west, the Mad River on the north, Fickle Hill Ridge on the east, and by Jacoby Creek and a line running through Arcata Bay, roughly parallel to Bayside Cut-off, on the south.

**** GENERAL PLAN MAP LAND USE CATEGORIES ****

The General Plan Map contains six major categories of land use designations and indicates appropriate areas for their development. The general pattern of land uses outlined on the General Plan Map should be the basis on which zoning districts should be established, although zoning ordinances contain more specific development requirements and standards than General Plan land use designations and policies. The Zoning Districts of the City of Arcata are identical to the General Plan categories, hence Arcata uses a single combined General Plan/Zoning Land Use Map. A discussion of the major characteristics of each of the General Plan land use categories is included in the General Plan Map section of each of the chapters of this report. The land use categories on the General Plan Map are as follows:

RESIDENTIAL

- * Residential Estates
- * Forest/Hillside
- * Rural Residential
- * Low Density Residential
- * Medium Density Residential
- * Medium-High Density Residential
- * High Density Residential

COMMERCIAL

- * General
- * Central Business District (CBD)
- * Thoroughfare

INDUSTRIAL

- * Industrial-Commercial
- * Heavy Industrial

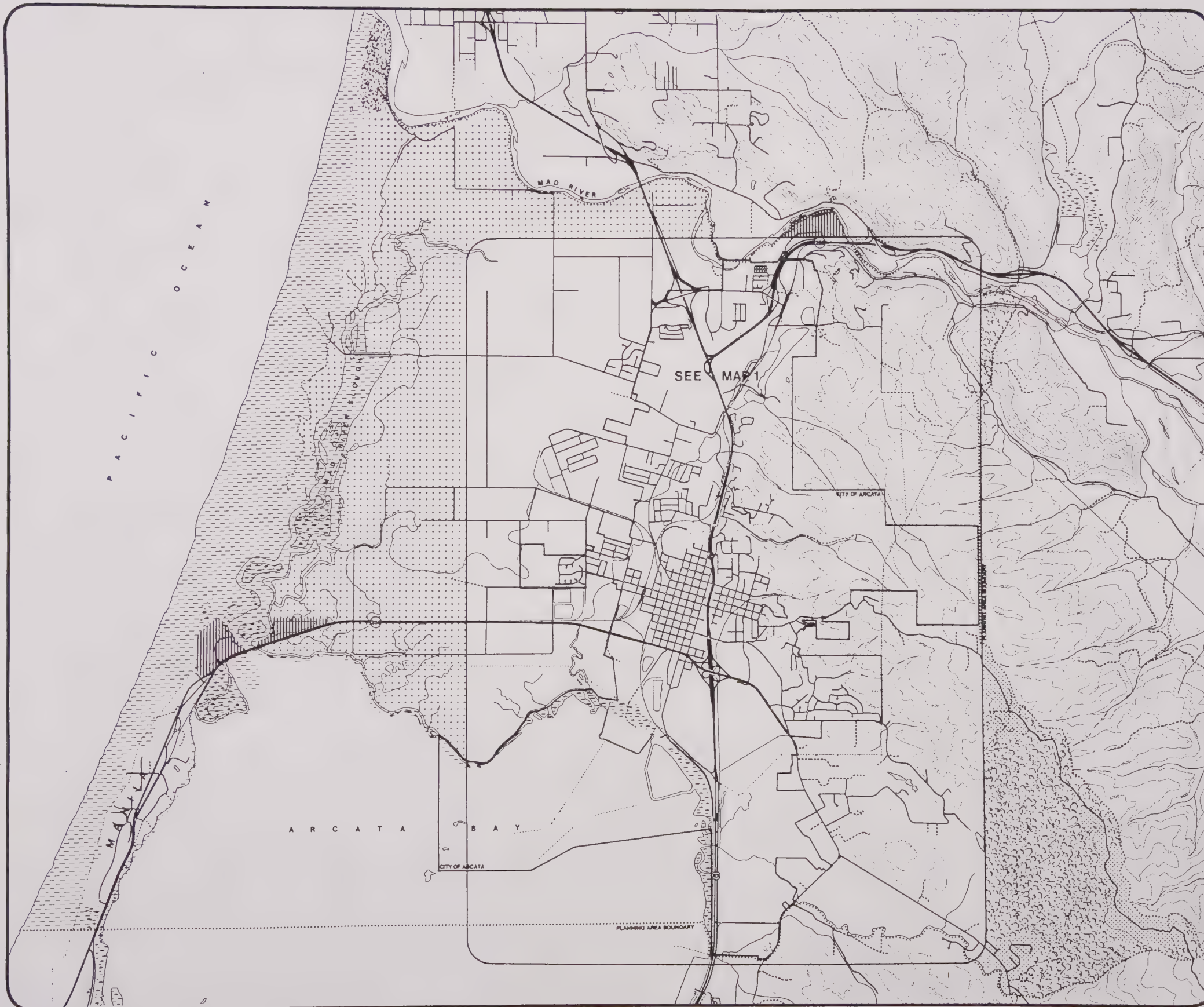
PUBLIC AND QUASI-PUBLIC

- * Other governmental and quasi-public facilities
- * Parks
- * Natural resource/wildlife habitat

RURAL

- * Agriculture-Exclusive
- * Residential-Agriculture

-
1. Appendix B presents the total acres designated on the General Plan Map for Residential, Commercial and Industrial use in the Arcata Vicinity (shown on Map 1); the amount of vacant acres in each category is also indicated.
 2. Net residential area excludes land area used for streets.



MAP 2 GENERAL PLAN

RESIDENTIAL

0.1-2.0 D.U./NET ACRE

INDUSTRIAL



PARKS & OPEN SPACE



PARKS



NATURAL RESOURCE /
WILDLIFE HABITAT

RURAL



AGRICULTURE



FOREST / HILLSIDE

CITY OF
ARCATA,
CALIFORNIA

GENERAL
PLAN
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The land use designations on the General Plan Map are based upon the population growth forecast for the Planning Area (see Opportunities, Constraints, and Needs report, pp. IV-13, IV-14). The high population projections are used, which indicate an increase from approximately 17,300 persons living in the Planning Area in 1980, to approximately 21,200 in 2000. The use of the high population projections, along with other assumptions, results in a high forecast of land use needs for 2000. In addition, the General Plan has designated significantly more land than these land use projections demand, to allow for sufficient choice in locating new development and to prevent increases in the cost of land by unduly constraining the supply of land.

Although the Manila area is included in the Arcata Planning Area, this document and accompanying maps do not directly address the issues with which the Manila area is faced. It is believed that Manila is a separate and identifiable community which should carry out its own planning process to develop plans and policies regarding its future development.

★★ GENERAL PLAN MONITORING ★★

There is always a need to update and amend general plans over time. This General Plan is based upon analyses and assumptions concerning social, economic, and physical conditions. This basic information is subject to change and refinement. It is therefore necessary for the City of Arcata periodically to review the Plan and its supporting data, in the light of new conditions and information. For example, the Plan is based upon a population increase of 3,900 by the year 2000. It is possible that this population level will not be achieved by 2000, and the Plan could therefore accommodate growth beyond this date. It is also possible that growth could occur faster than the projected rate, and therefore the Plan would have to be re-evaluated at some point to determine the extent and location of additional land which should be designated for development.

The General Plan is also based upon physical data which was used to indicate lands suitable for urban development. However, some of these data are not as detailed and specific as might be desired, especially concerning seismic and other geologic hazards. For example, the degree of risk involved in constructing dwelling units in areas subject to potential liquefaction is not known, and the General Plan calls for investigations prior to approval of major residential developments in these areas. The results of these investigations should be evaluated to assess the actual

degree of hazard and the cost of any required mitigation measures. The results of these investigations may require re-evaluation of some of the land designated for urban uses by the General Plan.

**** 1985 UPDATE ****

A comprehensive update of the General Plan was begun in 1985 with the revision of the **Residential Environment, Economic Environment** and the Land Use Map. These are the core Chapters of the General Plan. Other Chapters will be revised in the future. The process will begin again in 1990.

To begin the Plan revision process, a series of alternative futures or scenarios was reviewed and discussed by the Planning Commission and City Council. The scenarios described various different directions open to the City, the Policies which should be pursued to achieve those directions, and the Probable Consequences of implementing those scenarios.

The scenarios considered included:

- High Growth Scenario (the City seeks to maximize population growth),
- Preservation Scenario (the City seeks to minimize change),
- Tourist Mecca Scenario (the City focuses its energies on increasing tourism),
- High Tech Scenario (the City seeks high tech industry),
- We Just Fix Potholes Scenario (minimum government intervention)
- Bootstrap Scenario (emphasis on encouraging local entrepreneurs).

The Scenarios are realistic possibilities based on the focusing of City policies in one limited direction.

After a Council-Planning Commission study session, a Desired Scenario was prepared to be the starting point for the General Plan revision process. The Desired Scenario emphasizes aspects of the Bootstrap, Tourism and Preservation Scenarios. A copy of the Desired Scenario follows on the next page.

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DESIRED SCENARIO

Goal: To maintain the existing cultural, architectural and natural amenities of Arcata while encouraging moderate, controlled growth through the encouragement of local entrepreneurs in developing small manufacturing and tourism related businesses.

Policies:

1. The City should revise its zoning codes to allow a greater mix of uses in its industrial and commercial zones and liberalize its Home Occupation standards to encourage the development of small businesses.
2. The City should focus its community development activities on assisting small businesses through the encouragement of the development of industrial incubator buildings and through financing and technical assistance.
3. City policies should not encourage the development of prime agricultural lands by the provision of urban services or annexation.
4. The City should streamline its development review process to the greatest degree possible including transferring approval authority to the lowest level of the review structure.
5. Private tourist attraction projects which utilize the area's recreational, cultural and historical resources should be encouraged by the City.
6. The City should work to improve the appearance of the West End Road Industrial Area to encourage its use by light manufacturing businesses.

Probable Consequences: (City Limits 1995 population: 16,000)

1. New job creation and population growth will be slow but will lead to a more stable and diverse employment base.
2. The new jobs created will be filled largely by existing Humboldt County residents, however, they are likely to be relatively low wage jobs.

3. Public input on new developments will be reduced.
4. Some land use conflicts can be expected to arise as a result of the greater mix of uses allowed.

**** ORGANIZATION OF THIS REPORT ****

The chapters are organized in a form consistent with the major land use categories listed above. The first chapter following this Intro duction states the general policies relating to the overall urban development of Arcata, addressing the issues of urban expansion, and including consideration of the character and design of both existing and new development. Following this overall framework are separate chapters which contain policies addressing environmental, economic, residential, public facility and governmental coordination, park and recreation, and coastal issues. Each chapter contains a set of policies, a discussion of how these policies are reflected on the General Plan Map and a list of suggested implementation recommendations. Policies are identified by bold type number references in the left margin.

The implementation recommendations (identified by bold type letter references in the left margin) contained in the Plan text are a very important portion of this General Plan document, because they indicate the practical and programmatic requirements for carrying out the policies. In this fashion the immediate and longer-term implications of the policies for specific action and programs can be clearly seen. Implementation activities are likely to involve zoning and subdivision ordinance revisions and incorporation into the Land Use and Development Guide, the development of specific plans, and the preparation of a Capital Improvement Program.

8.

** I. URBAN DEVELOPMENT AND COMMUNITY DESIGN **

The policies contained in this chapter, and the recommended actions for their implementation, deal with the location of new development; where it should be encouraged or restricted; the kind of development pattern which is most desirable for Arcata; and the overall future design and appearance of the community. Many of the policies relating to urban growth are based upon the natural environmental features of the Planning Area, and the suitability of the land for urban and non-urban uses, as discussed in Chapter II. The remainder of the policies express local preferences as to what kind of a community Arcata should be. Many of the policies pertaining to community design and appearance propose physical planning and design actions to forward these preferences.

** POLICIES **

** URBAN GROWTH AND DEVELOPMENT **

- ** 1 ** The designation of areas for new urban development should reflect the physical features and natural characteristics of the undeveloped portion of the Planning Area.
- * Flood prone areas are not suitable for most types of urban development.
 - * Hillside and forested areas are suitable only for very low density development.
 - * Agriculturally suitable areas (Grades 1 or 2 on the Storie Index) are not appropriate for urban development, with the exception of designated areas contiguous to existing urban uses.
- ** 2 ** Greenbelts of agricultural use should be preserved adjacent to urban development. The greenbelts should also be used to separate different portions of the urban area. Other natural features which reinforce the distinction between city and country and which establish visual and associative links to nature should be retained.

- ** 3 ** The City should designate, with County concurrence, an urban services boundary, beyond which urban services would not be provided, except as provided for in Policy 4, and urban development would not be approved. (See Appendix J, Urban Services Boundary). Rural residential development could be approved outside the urban services boundary if the development would not require the extension of water, sewer, and other facilities. The area within the urban services boundary should eventually be annexed.

The urban services boundary should be based on an analysis of soil type, vegetation, topography (slope), availability of public water and sewer services, existing property lines, existing land use and potential for development. The boundary should not extend into the prime agricultural land or flood prone areas on the west and south, nor extend past the Mad River on the north. To the east, the boundary should not extend into the steeper portions of the Forest/Hillside areas, as designated on the General Plan Map. Parts of the Jacoby Creek and Bayside areas should be included within the urban services boundary.

- ** 4 ** The City shall not permit the extension of sewer mains or new water mains outside the City Limits and within the Planning Area.

The City may contract to provide sewer services to other cities or to community services districts subject to the following guidelines:

- (a) The areas to be served shall be outside of the Arcata Planning Area, and;
- (b) The City Council finds that no environmentally superior alternative exists to the provision of the services by the City of Arcata, and;
- (c) No connections will be allowed to the sewer lines in the area between the City Limits and the Arcata Planning Area Boundary.

The City shall retain discretion to extend domestic water and/or sewer services to existing residential units outside the City Limits subject to the following guidelines:

(a) The extension must be an emergency response to a failure of existing residential requirements, and;

(b) The capacity of the extension shall be limited to a size adequate to meet the existing residential requirements. No extension of trunk lines or oversized lines shall be permitted, and

(c) No new or additional uses may be permitted to have access to the extension, and;

(d) No extension shall be permitted to serve uses that are clearly inconsistent with adopted Land Use Plans and Policies, and;

(e) An annexation agreement shall be provided by the provided by the property owner.

The City may extend sewer and or water service to serve intensive agricultural uses beyond the City Limits and Urban Services Boundary subject to the following guidelines:

(a) The extension shall be only to serve the domestic needs of employees of an agricultural use, and;

(b) No new or additional uses may be permitted to have access to the extension, and;

(c) No agricultural chemicals or wastes may be discharged into the extension, and;

(d) The capacity of the extension shall be limited to a size adequate to meet the needs of the specific agricultural operation and shall be a pressurized system, and;

(e) In the event that the agricultural operation for which an extension is made ceases operation, the extension shall be disconnected from the City system and capped.

** 5 **

Approval should be given to development in areas where water and sewer infrastructure is available, prior to the approval of any projects which would require major new facility construction.

- ** 6 ** New urban development should be located in areas contiguous to existing urbanized areas to achieve economies in the provision of public services and facilities, and to minimize the loss of agricultural land. In addition, urban development should occur only within the incorporated areas of the City; areas should be annexed to the City prior to development approval.

Annexations to the City should be done in logical blocks which will move the City Limits out significantly or to the Urban Services Boundary. Incremental annexations of one or a few parcels within a larger area tend to make future annexations of the larger area more difficult as they remove potential supporters of annexation.

- ** 7 ** At full development, each major neighborhood area should have local commercial and recreational facilities, and a combination of residential densities, except where the natural topography does not permit intensive development. Neighborhood commercial and recreational facilities should be encouraged and provided in neighborhoods which presently lack such facilities.

** COMMUNITY DESIGN AND APPEARANCE **

- ** 8 ** The older structures which give Arcata much of its character should be preserved to the greatest degree possible. Priority should be given to preserving those structures of outstanding architectural or historic significance.
- ** 9 ** Conversion of historic structures from single-family residential to other uses (such as commercial, or multi-family residential) should be selectively allowed if the intrinsic character and outward appearance of the structure and the neighborhood of which it is part are not altered. Conversion to non-residential uses should be allowed only after a finding is made that such a conversion would not contribute appreciably to any housing shortage existing at the time of the conversion application. Demolition of an older

residential structure should also be subject to such a finding unless the replacement use to be constructed on the lot is also residential.

- ** 10 ** The Plaza Square serves as the focal point for community identity and enhances the "sense of place" and feeling of historical continuity for Arcata residents. Preservation of the character of the Square should be of utmost importance when planning uses in Central Arcata. The Plaza should be made to serve life today while preserving its historical design.
- ** 11 ** The downtown business area should continue to function as the main activity center of the City. The role of Central Arcata as the City's major comparative, specialty retail and entertainment center should be promoted. Maximum commercial use should be made of the blocks facing the Plaza, and efforts to improve bicycle and pedestrian access in the area should be encouraged. Adequate and efficient public parking lots should be provided in the downtown to encourage shopping. The historic character of the buildings in the downtown should be recognized documented. and preserved.
- ** 12 ** Arcata has developed at a small scale with a rich diversity of uses and building types. This diversity should be recognized as an asset which gives the City a special character.
- ** 13 ** The City's major roadways should be organized to improve linkages with key destinations while, at the same time, protecting residential neighborhoods from unrelated traffic.
- ** 14 ** A variety of recreational opportunities and common open spaces should be provided to serve the full range of residents' needs.
- ** 15 ** In order to improve pedestrian safety, special provisions should be made to minimize conflicts between pedestrians, autos, and bicycles.
- ** 16 ** Construction on hillsides should be limited so as to preserve existing land forms and retain significant vegetation.

- ** 17 ** Factors influencing the microclimate of developments which provide maximum exposure to sunlight and protection from adverse climatic conditions should be incorporated into site, architectural, and landscape design projects.
- ** 18 ** Housing structures and building sites should be designed to achieve the optimum balance between needs for privacy and social contact.
- ** 19 ** Sufficient outdoor living space should be provided to accommodate the private recreation and leisure needs of individual households.
- ** 20 ** Individual dwelling units, whether single family or multiple structures, should be readily distinguishable from the exterior so as to reinforce the residents' own identity and sense of individuality.
- ** 21 ** In both commercial and residential areas, buildings and outdoor spaces should be designed to avoid abrupt changes in building scale so as to promote a compatible relationship of height and bulk between structures.
- ** 22 ** Parking for residences should be designed to protect the privacy of the residents. Intrusion by auto noise and lights and visual disruption of the site by expansive, unlandscaped parking areas should be prevented. Parking lots in all areas should be visually screened from view from the street.
- ** 23 ** Buildings should be designed to reduce the potential for theft, robbery, vandalism and assault by the utilization of security measures. Buildings should also be designed and sited to facilitate surveillance by neighbors.
- ** 24 ** The major entrances to the City from U.S. 101 should be improved to create a strong and attractive first impression of the City for visitors.

- ** 25 ** The creeks, marshes and wetlands of Arcata provide a natural open space system. The City should take an active role in restoring and maintaining this system for the benefit of residents, visitors, fish and wildlife.
- ** 26 ** The City should be aware of the significance of Arcata Bay and the Bay shore as an urban design element. Access to the Bay and development near the Bay should be designed to take advantage of that design potential.
- ** 27 ** Tourism will play an increasing role in the economic future of the City of Arcata. City regulations and actions should recognise the importance of community appearance in attracting visitors to stay in and explore Arcata.
- ** 28 ** The urban design studies, Physical Design Recommendations for Achieving Community Social Goals (Sedway/Cooke, 1976), A Conceptual Open Space Plan for Arcata, California (Christensen, 1985), and the Views and Vistas Chapter of the 1989 Open Space and Conservation Element Technical Report should be used as resource and idea documents in the preparation of specific plans and in major project review.
- ** 29 ** The City should encourage the creation and display of art in public spaces in the community (such as the present use of murals on blank side or back walls of commercial buildings).

** GENERAL PLAN MAP **

Several of the land use categories, and their geographic distribution, are reflections of the urban development and community design policies. No major new residential development has been indicated within the flood prone area on the General Plan Map. The Forest/Hillside (OPEN SPACE AND CONSERVATION ELEMENT TECHNICAL REPORT (OSCE), Chapter V.B., Forest / Hillside Land) and Agriculture (OSCE, Chapter V.B.1., Agricultural Land and Soils; Zoning for Agriculture) designations indicate areas which are generally appropriate

for non-urban uses. Some housing could be constructed in the hillside areas; however the size of population that would be accommodated in these areas is relatively minimal. The agricultural areas include two large greenbelts in close proximity to the urbanized area.

The areas designated for urban development, including the urban expansion areas and other vacant areas inside the Urban Services Boundary, should be adequate to accommodate the projected acreage of additional urban development, as stated above in the Introduction. The distribution of commercial areas and the various residential densities is based upon Policy 7, with a resultant mixture of uses and densities in the various major neighborhood areas. The General Plan Map indicates a limited amount of commercial land use around the CBD area to help preserve the historic structures in the area and to encourage a more concentrated pattern of commercial development in close proximity to the Plaza.

**** IMPLEMENTATION ****

**** URBAN GROWTH AND DEVELOPMENT ****

**** A **** The Land Use and Development Guide shall continually be reviewed and modified to be consistent with the General Plan. This will require that zoning be changed from time-to-time to reflect new General Plan policies.

**** COMMUNITY DESIGN AND APPEARANCE ****

**** B **** The City shall implement two separate preservation processes. The first would be designed to preserve those structures which are culturally and/or architecturally historic; the second would be designed to preserve the character of certain selected neighborhoods.

- 1) Two official designations shall be made by the City Council:

* Individual historically significant structures, regardless as to whether or not they are located

in an Historic District (see below), should be designated as Historic Structures.

* Areas which contain a significant number of structures worthy of preservation should be designated Historic Districts. Although each and every structure in these districts may not be historically significant, the structures collectively, together with other features such as mature trees, flower gardens, etc., constitute an area worthy of preservation. An Historic District may include a block or part of a block, or may consist of an entire neighborhood, such as Central Arcata (generally those blocks indicated for low density development east of Alliance Road and South of 18th Street).

- 2) The City Council shall have the power to delay approval of a demolition permit for up to 6 months for any structure in order to provide interested parties an opportunity to purchase the structure.
- 3) Any structural modification in exterior appearance or change in use of any structure in an Historic District or one which is a designated Historic Structure would be subject to review and approval by the Design Assistance Committee and the Planning Commission.
- 4) All new construction in Historic Districts would be subject to review and approval by the Design Assistance Committee, and evaluated for compatibility with the surrounding neighborhood.

Appendix C presents a list of criteria which will be used to establish a list of historically significant structures. The City will work with the owners of such designated structures to enhance opportunities for preservation and restoration through such means as tax incentives, easement considerations grant applications and other possible appropriate actions in cooperation with the owner.

**** C **** The City shall encourage the continued viability of the CBD. The City should conduct a downtown study and prepare a plan which would analyze vehicular and pedestrian circulation systems, parking, land uses, and the design of the downtown

with the aim of augmenting the downtown's role in the local economy.

**** D **** Windrows and hill forms serve to distinguish various subareas of the City and act as reference points in the natural landscape. When reviewing development plans, the City shall make every effort to retain the following windrows and general relief of the following hill forms:

- * The cypress windrows and hill forms separating Arcata Heights from the Sunset neighborhood.

- * The low vegetation and hill form along the north and west edge of the Sunset neighborhood which serve to separate this area from Westwood.

- * The heavily forested hills along the City's eastern edge which act as a backdrop for views from the west and as a strong visual and physical eastern edge to the City.

- * The small knoll and related trees adjoining the freeway south of Spear Avenue which, in conjunction with the hills to the east of the freeway, act as a visual gateway to the City.

- * The grove of trees immediately adjoining the freeway on the west between 7th and 14th Streets which serves as a major landmark and indicator of approaching points of egress for motorists on U.S. 101.

- * Windrows in the Arcata Bottoms which act as reference points and visual relief from the topographical uniformity of the bottoms lands.

- * The grove of trees along the westerly side of Highway 101 at the interchange with Highway 299.

- * The eucalyptus trees which line Bayside Road, east of Union Street.

**** E **** The City shall enforce zoning ordinance requirements which reflect the diversity of its historical development. The use of more flexible zoning techniques, such as; Floor Area Ratios and Open Space percentages for controlling density and

Height to Setback Ratios, will allow designers more opportunity to respond to the special needs of each project and each site while still protecting the health, safety and welfare of residents.

- ** F **** The City shall continue to require design review of new development by the Design Assistance Committee prior to issuing building permits. Several policies and recommendations concerning the design and appearance of residential, commercial, and industrial areas are included in the policy section of this chapter and in Chapter III. These policies are incorporated into the City's Design Manuals which set forth the principles and criteria which the Design Assistance Committee uses in reviewing applications.
- ** G **** When designing new streets or reconstructing old streets in residential areas, the City shall consider the following design modifications to discourage unrelated traffic:
- * "necking" or narrowing the entrance to a street by extending the curbs to slow traffic
 - * narrowing the street width to provide a psychological impediment to the driver in a hurry
 - * altering the flow and direction of traffic by erecting barriers or diverters
 - * closing streets when appropriate.
- ** H **** The City shall strive to increase pedestrian safety when reconstructing crosswalk areas by considering the following design modifications:
- * increasing the intensity of lighting or focusing lighting on crosswalks
 - * reducing street width to decrease crossing time
 - * keeping curbside parking back from the crosswalk to give adequate sightlines to approaching motorists

- * installing a cautionary strip on the approach to crosswalks

- * changing paving material at crosswalks to provide contrast with normal paving

- * providing ballards or posts or raised curbs to protect pedestrians.

**** I **** In order to preserve existing landforms and retain significant vegetation in the hillsides, the following principles shall guide future hillside development:

- * use retaining structures to approximate natural topography; limit grading to reinforce natural grades

- * roads should not be permitted to traverse slopes in excess of 12 percent except for short distances

- * units should be clustered both to reduce the road length and to permit the integration of roadway retaining walls with residence foundations

- * extensive regrading of a site should not be permitted

- * structures should have sufficient horizontal or vertical distance from each other to retain views; special attention should be given to roof design

- * natural materials should be used for housing units

- * measures should be taken to protect mature trees during and after construction such as fencing around driplines, limiting excessive dust through the use of sprinklers, and limiting changes in surface drainage.

**** J **** In order to design for maximum climate control the City shall encourage the utilization of covered entryways for rain protection, provide wind breaks in western neighborhoods, and carefully site structures and vegetation for maximum sunlight exposure.

**** K **** The City shall enforce the guidelines stated in the Design Manuals encouraging building scale and the scale of outdoor spaces created by structures to be visually satisfying. Among the techniques for achieving compatible scale are:

- * limiting the total length of a structure and the length of an unbroken facade to 120 and 70 feet respectively
- * designing structures higher than two stories to emphasize a horizontal rather than a vertical appearance
- * using landscaping or an overhead structural projection to retain the dominant building scale
- * breaking the mass and bulk of buildings by changes in roof levels and planes
- * using brick, wood shingles, or wood siding to convey a more intimate scale
- * retaining natural site features as scale giving elements such as trees, hill forms, rock outcroppings, and stream courses.

**** L **** Samoa Boulevard and South G Street are major entrances to the City. Improvements should be undertaken to enhance the attractiveness of these two areas. Improvements may include: undergrounding of utilities; landscaping along the streets and between South G Street and the freeway; construction of sidewalks where needed; and improved informational signing. Review of private projects along these streets should recognize their importance.

**** M **** The view of the City from U.S. 101 is the first impression available to most visitors to the City. New billboards along the freeway are prohibited and every opportunity to reduce the number of existing billboards should be taken. The City supports changes to State and Federal law which presently limit the ability of Cities to force removal after amortization.

The City encourages Cal Trans to expand the use of logo identification freeway exit markers similar to those allowed in Oregon and along Highway 5 in California. These logo exit markers reduce the

need for large pole signs on private property for freeway dependent businesses.

The City should develop attractive entrance structures at the north and south ends of the City along the highway which welcome visitors to Arcata and identify the natural and cultural visitor attractions available in the town.

** N ** Local creeks which flow through the developed portion of the community should be retained in a open state wherever possible and developed as visual assets to developments which adjoin them.

SEISMIC SAFETY ELEMENT

A PORTION OF THE SAFETY ELEMENT

OF THE 1985

CITY OF ARCATA GENERAL PLAN

PREPARED FOR:

CITY OF ARCATA
736 F STREET
ARCATA, CA 95521

PREPARED BY:

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MAY 1987

SEISMIC SAFETY ELEMENT - CITY OF ARCATA

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I. INTRODUCTION

A. Legislative Authority

The California State Legislature, through requirements of the Seismic Safety and Safety Elements, has placed specific responsibilities on local government for identification and evaluation of natural hazards and formation of programs and regulations to reduce risk. Specific authority is derived from Government Code Sections 65302(f) and 65302.1 which require Seismic Safety and Public Safety Elements of all city and county general plans, as follows:

"A Seismic Safety Element consisting of an identification and appraisal of seismic hazards such as susceptibility to surface ruptures from faulting, to ground shaking, to ground failures, or to the effects of seismically induced waves such as tsunamis and seiches."

"The Seismic Safety Element shall also include an appraisal of mudslides, landslides, and slope stability as necessary geologic hazards that must be considered simultaneously with other hazards such as possible surface ruptures from faulting, ground shaking, ground failure, and seismically induced waves." (Section 65302(f)).

"A Safety Element for the protection of the community from fires and geologic hazards including features necessary for such protection as evacuation routes, peak load water supply requirements, minimum road widths, clearances around structures, and geologic hazard mapping in areas of known geologic hazards." (Section 65302.1).

The effect of these sections is to require cities and counties to take seismic and other natural hazards into account in their planning programs. The principal catalyst for this requirement was the February 9, 1971 San Fernando earthquake in which 65 people were killed and property damage exceeded the billion dollar mark. Conclusions from the 1973 Urban Geology Master Plan for California also give cause for considering geologic hazards in the planning process. Summary conclusions from this study estimate dollar

losses due to geologic hazards in California between 1970 and 2000 will amount to more than \$55 billion.

B. Objectives, Purpose and Approach

Northern Geotechnical Incorporated (NGI) was retained to provide an updated Seismic Safety Element for the City of Arcata General Plan. NGI collected, analyzed and summarized published and unpublished geologic information for the study area defined by the planning staff of the City.

The basic objectives of the Seismic Safety Element are to identify and evaluate seismic and landslide hazards that affect residents of the City of Arcata and to recommend policies that would reduce the adverse impact of those hazards if they are realized. Specifically, this element evaluates both primary and secondary seismic hazards, landslides, and inundation as a result of a catastrophic failure of Matthews Dam on the Mad River. The intent of the recommended policies is to provide an opportunity to reduce loss of life, property damage, and social and economic dislocations in the event of a major earthquake.

The purpose of this document is to serve as an official guide to the City Council and the Mayor, the Planning Commission, and other governmental bodies, citizens, and private organizations concerned with natural hazards in the City of Arcata. The Seismic Safety Element is intended to establish uniformity of policy and direction within the City government to minimize the risk from seismic events and other geologic hazards. This Element includes goals, policies, safety criteria and maps as a basis for decision-making in public and private development matters. Such information is to be used in conjunction with other established City policies contained in the General Plan and should play a major role in determining future land use.

This Seismic Safety Element has been prepared for the City of Arcata as a replacement for the outdated (1975) existing element. Since the completion of the previous Seismic Safety Element, many geologic studies focusing on seismic issues have increased the understanding of the local seismic setting. This Seismic Safety Element is a compilation of existing geologic information from a wide range of sources available at the time of preparation. It should be noted that the sciences of seismology and earthquake hazard reduction are relatively young and that much remains to be learned.

II. DATA AND ANALYSIS

A. Background to Geologic Hazards Findings

1. Introduction

Two basic groups of geologic hazards are considered in this document: seismic and slope failure (landslide). There are several types of seismic hazards which can be grouped in a cause-and-effect classification that is the basis for the order of their consideration. Earthquakes originate as shock waves generated by movement along an active fault. The primary seismic hazards are ground shaking and the potential for ground rupture along the surface trace of the fault. Secondary seismic hazards result from the interaction of ground shaking with existing soil and bedrock conditions, and include liquefaction, settlement, landslides, tsunamis or "tidal waves," and seiches (oscillating waves in lakes and reservoirs). Water inundation resulting from catastrophic dam failure is also included as a secondary seismic hazard.

Landslides are often associated with earthquakes, but may be triggered by other factors including high soil moisture conditions and soil disturbance as a result of development. Because slope failure is not necessarily dependant on seismicity, slope stability hazards are considered separate from seismic hazards. As a general condition, slope failure will commonly occur in high slope stability hazard areas following a locally centered large magnitude earthquake especially if the earthquake occurs contemporaneously with unusually high soil moisture conditions.

The potentially-damaging natural events (hazards) discussed above may interact with man-made structures. If a structure is unable to accommodate the natural event, failure will occur. The potential for such

failure is termed a structural hazard, and includes not only structures themselves, but also the potential for damage or injury that could occur as the result of movement of loose or inadequately restrained objects within, on, or adjacent to a structure.

Summaries of the various hazard investigations that were conducted in the study area are discussed below.

2. Fault Investigation

Recent fault investigations of the Mad River Fault Zone (Lettis, 1977; Herd, 1978; Woodward-Clyde Consultants, 1980; Weaver, 1981; Carver et al., 1982, 1983, 1984; Kelly, 1984) have produced new data regarding active and potentially active faults in the vicinity of the City of Arcata. This information was compiled, analyzed and summarized onto the Fault Map (Plate A). In addition, stereographic aerial photographs were examined to determine the location and surficial characteristics of geologic lineaments observable from the air. Lineaments exhibiting youthful topographic morphology suggestive of recent surface fault rupture activity are included on the Fault Map and are tentatively described as potentially active faults.

3. Ground Shaking Investigation

An investigation was conducted and a map produced identifying other causative faults in the region (see Regional Fault Map, Figure 1). These faults are potentially capable of producing moderate to high levels of ground shaking in the study area. An attempt to provide a ground shaking intensity map was initiated during this study. An intensity map would typically be based on a determination of the maximum credible earthquake for the study area. Based on our evaluations, the entire planning area of the City of Arcata would be subject to Modified Mercalli intensity of X, hence, no intensity map was compiled for this project.

4. Seismically-Induced Ground Failure Investigation

An evaluation of the potential for seismically induced ground failure was conducted. The ground failure processes examined include liquefaction, landslide and settlement. This investigation included topographic and geologic map interpretations, review of aerial photographs, historical accounts, and compilation of data from selected geotechnical investigations. Depth to bedrock, depth to groundwater, distribution and depth of uncontrolled fill, and potential for ground failure based on the physical characteristics of unconsolidated sediments were the major geotechnical variables considered in our evaluation (see Plate B).

5. Tsunami Investigation

An investigation of the potential for tsunami damage was conducted. This investigation included review of published reports, tide gauge measurements, historic accounts and compilation of pertinent information.

6. Seiche and Dam Failure Inundation Investigation

An investigation focusing on the potential for water inundation in the Arcata vicinity was conducted. Because a catastrophic failure of Matthews Dam would inundate a larger portion of the City than would a seiche, a catastrophic dam failure Inundation Map was compiled. The Inundation Map (Plate D) shows the potential limits of the area that could be flooded.

7. Slope Stability Investigations

An evaluation of slope stability hazards in the Arcata area was conducted. This evaluation utilized air photo interpretation, compilation of

information from existing geologic and soils engineering maps, and pertinent reports on file with the City of Arcata. The data in this section is presented as Plate C and is based on information available at the time of the investigation.

B. General Geologic Findings

1. Introduction

The Humboldt Bay area landscape was primarily created by geologic processes, including regional uplift and localized faulting, that have been active over the last million years, a relatively short period in the geological history of the earth. The rim of the Pacific Ocean is one of the world's principal areas of recurrent geologic activity, including frequent major earthquakes. The Cape Mendocino vicinity is one of the most seismically active areas on the Pacific rim. To protect life and property, the city officials of Arcata must be acquainted with the geologic hazards related to major earthquakes.

Geologic information produced by this study is intended to be sufficiently detailed to produce policies and programs designed to regulate land development through the implementation of a Seismic Safety Element of the General Plan of Arcata. The geologic information is also applicable to structural hazard abatement programs and earthquake emergency planning. However, geologic information provided in this report is not site specific. In order to determine actual geologic conditions and related hazards for a particular site, it is necessary to conduct geologic and soil investigations that are of sufficient detail to assess the geotechnical appropriateness of the proposed use of the site.

2. General Geology

The Arcata area is underlain by bedrock belonging to the Late Jurassic to Late Cretaceous age (approximately 70 to 140 million years before the present) Franciscan Assemblage. In this area, the Franciscan can be divided into two principal lithologic units; the sandstone unit and the melange

unit. Rocks of both units are, with few exceptions, highly folded, fractured, and extensively weathered.

The sandstone unit is typically composed of hard, variably fractured and metamorphosed, greywacke sandstone. Rocks of the sandstone unit are susceptible to rockfall, shallow debris slide, and occasionally rotational slump slope failure processes on steep hillslopes. Gentle to moderately sloping areas are not commonly affected by large-scale slope failure under natural conditions. In general, the sandstone unit exhibits a higher degree of slope stability than does the melange unit.

Melange consists of a tectonically sheared assemblage of isolated, hard, rock blocks of diverse composition in a generally highly weathered, highly sheared, plastic claystone matrix. Hillslopes within this unit are commonly landslide-prone and are susceptible to rotational slump, slump-earthflow and mudflow slope failure processes.

Unconformably overlying the Franciscan rocks are marine and continental deposits of the early to middle Pleistocene age (approximately 1.8 million to 500,000 years BP) Falor Formation. The Falor Formation typically consists of moderately-well consolidated, commonly lenticular, sand, silt and pebbly gravel deposits. Steep hillslopes underlain by Falor deposits may be susceptible to debris slide and shallow to moderate depth rotational slope failure processes.

Along the eastern bay margin are scattered remnants of uplifted, late Pleistocene age (approximately 200,000 to 11,000 years BP) marine terrace deposits consisting of poorly to moderately consolidated sands, silts and gravels. Most of the City of Arcata is located on one of these terraces.

Holocene age (approximately 11,000 years BP to present) deposits include unconsolidated marginal bay sediments, beach deposits, sand dunes,

stream channel deposits, stream overbank (flood) deposits, recent landslide deposits and colluvium. Most of the hillside areas in the vicinity of the City of Arcata are mantled by colluvial deposits of variable thickness and composition.

The "Arcata Bottoms" is the largest Holocene deposit in the City of Arcata planning area. The Bottoms are primarily tidal flats, marsh and low-lying floodplain. The Bottoms are typically composed of unconsolidated, organic-rich clayey silts and silty clays with variable quantities of fine-grained sand. These materials are predominantly deposited during flood periods that are coincident with abnormally high tides.

References for this section include: 7, 17, 26, 28, 33, 38, 50, 55, 56, 65, 91 and 92.

3. Tectonic History

To understand the present-day tectonic processes that are influencing coastal northern Humboldt County, one must contemplate the geologic character of the middle Tertiary period (approximately 20 million years before present). Evidence suggests that the middle Tertiary was a time of relative tectonic stability with low relief landscapes, low erosion rates and stable land surfaces that were subjected to prolonged weathering. Slow, regional subsidence and the formation of large-scale depositional basins began during the late Tertiary (approximately 8 million years before present) and continued through the early Quaternary period (approximately 2 million years before present). During this time of subsidence, sea level fluctuated in response to glaciation. Along with sea level fluctuations, rates of precipitation and amounts of sediment discharged from rivers were also affected by climatic changes. Thick sediments of marine and continental origin were deposited in the subsiding basins. Contemporaneous with the formation of these sedimentary basins during the early Quaternary period, the

beginning of a sequence of dynamic compressional tectonic processes began. These processes have continued into the present, resulting in the development of large northwest trending folds and generally parallel, northeast dipping thrust and reverse faults. Along coastal northern California, localized uplift and subsidence associated with this tectonic deformation has produced areas of alternating emergent and submergent shorelines. Uplifted thrust blocks and large anticlinal crests, such as Fickle Hill, formed headlands while down-faulted blocks and synclinal troughs became bays, estuary-delta complexes and lagoons. Jacoby Creek occupies the axial portion of a synclinal trough.

The portion of the City that is situated between Fickle Hill and the bottom lands occupies an uplifted Pleistocene age marine terrace. The originally gentle sloping surface has been tectonically deformed by compressional folds and thrust faults. Although these faults probably continue under the Arcata Bottoms, no evidence for their existence has been found. In an area of continued tectonic deformation, it is a basic concept that the older the geologic formation is the more deformed it will be. In the Arcata area, the more recent Holocene age deposits are largely undeformed while the underlying older deposits are commonly deformed by tectonic processes.

References for this section include: 17, 22, 23, 24, 25, 26, 27, 33, 39, 42, 50, 65, 82 and 96.

4. Seismic Setting

a. General Conditions

The City of Arcata is located in a seismically active area and in close proximity to several of the active and potentially active faults in northern California. This section discusses the earthquakes that should be

anticipated in the future and how they are likely to affect the study area. For purposes of delineating seismic hazards, the principal faults considered capable of producing strong ground shaking in the study area are shown on the Regional Fault Map (Figure 1). Significant earthquakes can, and probably will, occur on other faults in the region; however, available geologic data suggests that the effects of earthquakes from these faults are likely to be significantly less than the effects from earthquake activity on the faults shown on the Regional Fault Map.

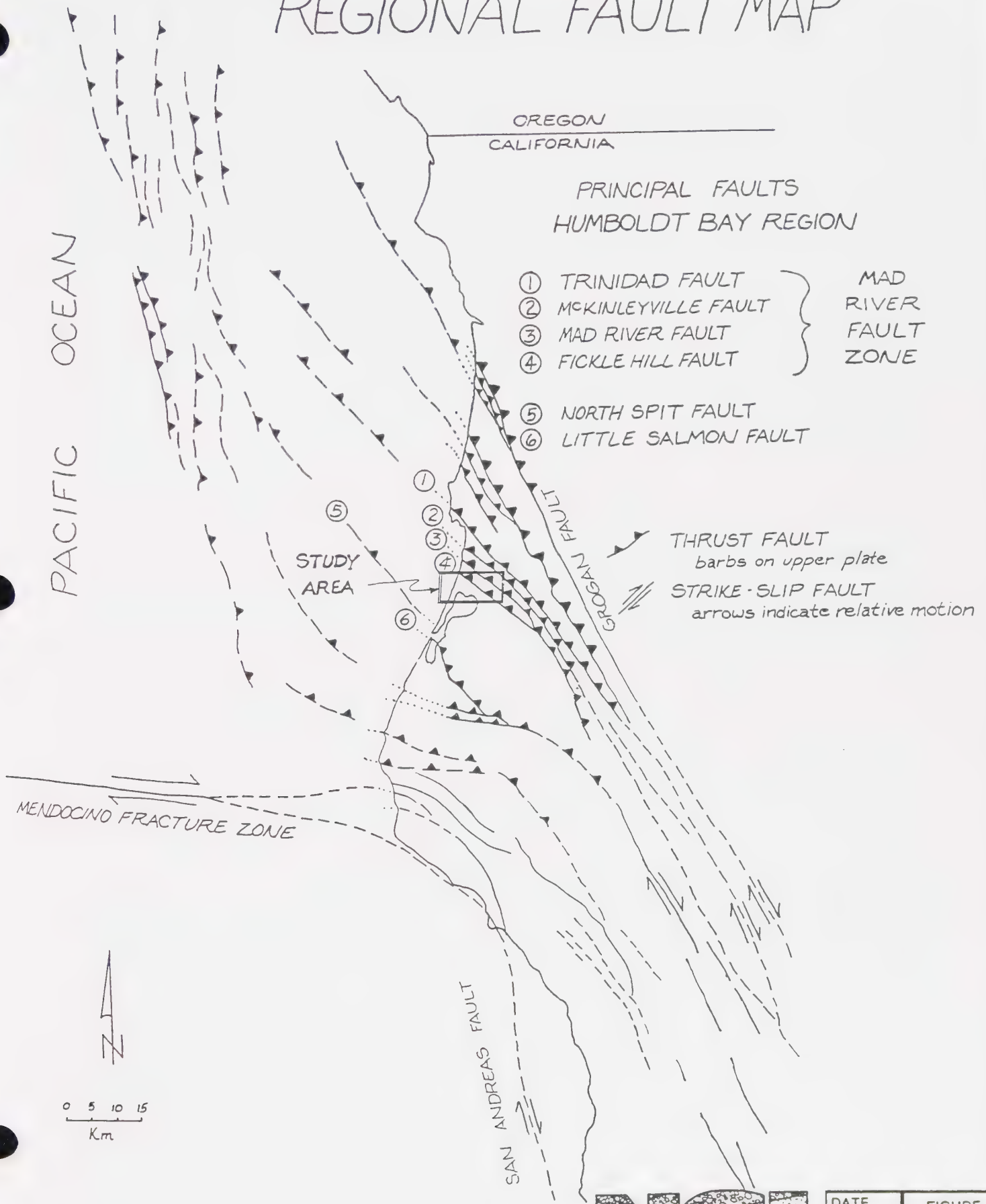
b. Sources of Seismicity

(1) Mad River Fault Zone

The Mad River Fault Zone (MRFZ) has only recently been studied in detail. Recent geologic studies have concluded that various portions of the MRFZ are active and are a likely source of historic earthquakes. This zone is characterized by several major, northwest trending, northeast dipping thrust faults and numerous associated minor splays and conjugate faults. The zone is at least 10 miles (15 kilometers) wide and 30 miles (48 kilometers) long. The various major faults are generally considered capable of producing large earthquakes. Major faults within the MRFZ include, from north to south, the Trinidad, McKinleyville, Mad River and Fickle Hill faults.

Unpublished field notes and interpretations of aerial photographs by Young (1970) describe lithology and structure of the Falor Formation in the Arcata vicinity and along the southwest flank of Fickle Hill. Young also mapped and described a segment of the Fickle Hill Fault located southeast of Arcata. Young indicates that the Fickle Hill Fault strikes about N 45° W and dips approximately 35° NE, displaying predominantly reverse dip slip movement with Franciscan rocks being thrust over the Falor Formation.

REGIONAL FAULT MAP



REFERENCE: AFTER CARVER, 1985

An unpublished report by Teknekron, Inc. (1974) for the Pacific Gas and Electric Company evaluated seismic data from a network of seismograph stations in the Eel River-Mad River Basin. The report suggests a relationship between the MRFZ and observed regional seismicity.

Woodward-Clyde Consultants (1980) investigated exposures in sea cliffs, road cuts and exploration trenches, and concluded that individual faults within the MRFZ display a complex system of imbricate, northeast dipping fractures and fault surfaces with secondary, generally southwest dipping conjugate fractures and faults. In general, primary faults trend north 15 to 55 degrees west and dip between 20 and 50 degrees to the northeast. Most faults and fractures that they studied exhibited reverse dip-slip displacement.

Carver, Stephens and Young (1982) mapped and described the northwest-trending MRFZ extending from near the settlement of Maple Creek (approximately 8 miles southeast of Blue Lake) to the Pacific Ocean. Their study indicates that the MRFZ is a system of imbricate, northwest-trending, northeast-dipping reverse faults. Fault-bounded blocks within the zone have tilted or rotated around northwest trending axes that are nearly horizontal in orientation. Fickle Hill appears to represent a faulted anticline which has developed since deposition of the Falor Formation.

Based on preliminary trace element analysis of the Canon Creek ash (found near the base of the Falor Formation), Falor deposition began in the early Pleistocene (approximately 2 million years before present). Since Falor deposition, at least 3 miles (5 kilometers) of fault displacement has occurred across the MRFZ (Carver et al., 1982). Tectonically deformed marine terraces found within the zone suggest that faulting and warping has continued into late Pleistocene. Youthful geomorphic expression of some fault

features in the MRFZ suggests that there is a substantial likelihood that Holocene (less than 11,000 years before present) displacement has occurred along the principal faults.

The California Division of Mines and Geology (1983), as part of the Alquist-Priolo Special Studies Zone Act, has produced fault maps of portions of Humboldt County. Information shown on these maps is based on compilations of published and unpublished data, field observations, and interpretations of aerial photographs.

Conclusions based on the data summarized above are as follows:

(a) The MRFZ is a zone of complex, reverse faults that generally parallel the regional structural trends.

(b) The fault zone is significantly more extensive than is shown on the 1978 edition of the state geologic map.

(c) The fault zone is most likely the source of the magnitude 6.5, 21 December 1954 "Eureka Earthquake."

(d) The major faults in the MRFZ are considered active. The MRFZ is expected to be the source of strong earthquakes in the future.

(2) San Andreas Fault Zone

The San Andreas fault is located approximately 40 to 45 miles south-southeast of the City of Arcata (see Figure 1). The San Andreas fault has generated two "great" earthquakes in recorded history: the 1857

Fort Tejon earthquake (magnitude 7.5 - 8.5), and the 1906 San Francisco earthquake (magnitude 8.3). Ground shaking intensities within the study area were not recorded for the 1857 event, but reached a level of VII to IX on the Modified Mercalli Scale during the 1906 earthquake (Lawson, 1908).

(3) Mendocino Fracture Zone

Studies of historic earthquakes in the region indicate that the Mendocino Fracture Zone (see Figure 1) is the major source of earthquakes in the area (Real, et al., 1978). This complex zone of faults makes up the boundary between two major crustal plates and has historically produced many small to moderate earthquakes and several moderate to large earthquakes.

Based on historical evidence it appears that seismic activity along the Mendocino Fracture Zone will have significantly less effect on the study area than will activity along either the San Andreas fault or the MRFZ.

(4) The Deep Seismic Zone

Seismicity in the Deep Seismic Zone appears to be caused by internal deformation of the subducted Gorda oceanic crustal plate located west of and beneath the Humboldt Bay Region at a depth of 6 to 12 miles. A substantial number of earthquakes resulting from deformation of this crustal plate have been of strong magnitude. The most recent strong earthquake from this source was a magnitude 7.0 which occurred on 8 November 1980. Other strong earthquakes from the Deep Seismic Zone are likely to produce moderate to strong levels of seismic shaking in the Arcata area.

(5) The Little Salmon Fault

The Little Salmon fault is a major thrust fault located approximately 13 miles southwest of the study area. The fault strikes northwest, dips 25°NE to 35°NE , and is approximately 25 to 30 miles long. The surface expression of the fault extends northwest from the vicinity of Carlotta to approximately 1 mile southeast of the entrance to Humboldt Bay. The Little Salmon Fault is considered capable of producing strong ground shaking in the Arcata area.

(6) Other Sources of Seismic Shaking

In the Humboldt Bay Region, active and potentially active faults, other than those previously discussed, have been identified and mapped (see Regional Fault Map, Figure 1). Currently available information suggests that these seismic sources will produce only moderate levels of seismic shaking in the Arcata area and are, therefore, not considered germane to this study.

References for this section include: 5, 6, 8, 15, 17, 23, 24, 25, 26, 27, 33, 34, 37, 39, 42, 45, 46, 50, 51, 55, 56, 57, 58, 59, 60, 64, 65, 68, 69, 74, 76, 81, 82, 88, 95 and 96.

C. Seismic Hazards

Seismic Safety Elements in the State of California are required to include:

- o An Assessment of the Potential for Surface Fault Rupture;
- o An Assessment of the Potential for Ground Shaking;
- o An Assessment of the Potential for Seismically-Induced Ground Failure;
- o An Assessment of the Potential for Tsunamis and Seiches;
- o An Assessment of Possible Inundation from Seiches and Seismically-Induced Dam Failure; and
- o An Assessment of Slope Stability.

A discussion of these issues follows:

1. Surface Fault Rupture

A fault is a break in the earth's crust, along which movement has occurred. Fault displacement occurs when a land mass on one side of a fault moves in relationship to a land mass on the other side. Fault displacement processes have occurred on the earth since its creation resulting in the formation of millions of faults. Most of these faults are extinct or long dormant. This section is concerned with active and/or potentially active faults that are capable of displacing the ground surface. The California Division of Mines and Geology consider an active fault as one which has moved during the last 11,000 years.

During a surface fault rupture event, associated with a large magnitude earthquake, several feet of vertical displacement along either a discrete fault plane or across a narrow zone of faults can be expected. Structures or utilities constructed across the zone of displacement are likely to be offset or severed.

The City of Arcata is located within the MRFZ (Figure 1). The MRFZ is characterized by several major, northwest trending, northeast dipping thrust faults and numerous associated (typically minor) conjugate faults. The on-land portion of the zone is at least 10 miles (15 kilometers) wide and 30 miles (50 kilometers) long. Evidence suggests that the MRFZ extends offshore a considerable distance. The MRFZ is considered active and capable of producing large magnitude earthquakes. Major faults within the MRFZ include, from north to south, the Trinidad, McKinleyville, Mad River and Fickle Hill faults. The City of Arcata is traversed by the Fickle Hill fault.

The level of activity and recurrence intervals between individual faulting events in the MRFZ is uncertain at this time. Recent studies by Carver et al. (1982); Woodward-Clyde Consultants (1980); and Herd (1978) indicate that individual faults have moved repeatedly during the last 100,000 years. These studies indicate that recurrence of surface fault rupture events on individual faults within the zone is probably on the order of several thousand years.

It is not possible to predict where the next surface displacement will occur along a particular fault. Many geologists believe that the next movement is likely to take place along the fault trace which moved last. Obviously, there are numerous exceptions to this general rule of thumb. A reverse fault rarely consists of a single trace but is typically a complex system of branch and secondary faults. Within this complex fault system or zone, the majority of the movement occurs along a main or primary fault,

however, significant amounts of displacement may occur on the branch or secondary faults.

On 1 July 1983, the California State Geologist delineated an Alquist-Priolo Special Studies Zone for two branches of the Fickle Hill fault. This zone transects the City of Arcata. Evidence for the delineation of the zone includes the existence of scarps, deformed strata and displaced terrace surfaces. Other areas within the City limits that possess similar, but less obvious, fault-like geomorphic features were not identified by the State as Special Study Zones. These similar features are mapped as potentially active faults (PAF) on the Fault Map (Plate A).

References for this section include: 3, 10, 11, 12, 19, 20, 29, 33, 40, 43, 53, 64 and 94.

2. Ground Shaking

In general, most earthquake-related structural damage and resulting death and injuries are caused by ground shaking. Strong to very strong earthquakes commonly cause objects to fall and kill or injure people.

Studies of structural damage caused by numerous past earthquakes have generally led geologists and engineers to the conclusion that the most severe damage typically occurs in areas underlain by thick, soft, water-saturated sediments or in areas susceptible to earthquake-induced landslides. Less severe damage typically occurs in areas where structures are built on competent bedrock.

Seismically-induced ground shaking results from seismic shock waves moving through or along the surface of the earth. Parameters that affect the severity of ground shaking include the shock wave amplitude, shock wave frequency, duration of shaking, geologic/soils conditions, and site

configuration. Ground motion effects are commonly expressed as a measure of the acceleration of a point on or attached to the ground surface.

To estimate potential future ground acceleration values for the study area, the magnitude of the maximum credible earthquake must be known. The empirical relationship of the logarithm of fault length to magnitude (Slemmons, 1977) suggests a maximum credible earthquake of magnitude 7.7 for any of the principal faults within the MRFZ.

Geologic literature provides a basis for estimating peak ground acceleration values given a maximum credible earthquake and the distance to the causative fault. Determinations of acceleration values differ depending on the method used. Expected peak ground acceleration values for Arcata using methods developed by Hoffman (1974), Schnabel and Seed (1973) and Davenport (1972) range between 0.95 g and 0.74 g with repeatable accelerations ranging between 0.62 g and 0.48 g for a magnitude 7.7 earthquake on the Fickle Hill Fault. It should be understood that peak and repeatable acceleration values are non directional. Various vertical and horizontal components can be measured. Expected intensity for the maximum credible earthquake in Arcata is on the order of X (Modified Mercalli Scale, Figure 2).

Since 1927, the Arcata area has experienced 8 earthquakes producing local intensities of VI or greater. These earthquakes include the following:

<u>Date</u>	<u>Modified Mercalli Intensity</u>
20 August 1927	VIII
22 September 1930	VII
6 June 1932	VIII
21 December 1954	VII
4 September 1962	VI
14 November 1975	VI
3 February 1979	VII
8 November 1980	VII

MODIFIED MERCALLI SCALE OF EARTHQUAKE INTENSITY

(1956)

(Modified from Don Tocher, 1964)

Approximate
Ground Acceleration

$$a/g = \frac{\text{Acceleration}}{\text{Gravity}}$$

	I. Not felt.
0.002g	II. Felt by persons at rest, especially on upper floors, or similarly favorable places.
0.004g	III. Felt indoors, but may not be recognized as an earthquake. Vibrations resemble those from a passing light truck.
0.008g	IV. Felt indoors like the vibration from a passing heavy truck or the jolts of a heavy ball striking the walls. Hanging objects swing; standing objects rock; windows, dishes, doors rattle; glasses clink; walls and frames may creak.
0.02g	V. Felt outdoors. Sleepers awaken; liquids move and some spill; small unstable objects move or fall; doors swing; shutters and pictures move; pendulum clocks stop or change rate.
0.04g	VI. Felt by all. Many run outdoors in fright; people walk unsteadily; windows, dishes, glassware break; knickknacks, books, dishes fall from shelves, pictures from walls; furniture moves or overturns; weak plaster and poor masonry cracks; small church and school bells ring; trees, bushes, shake visibly and rustle.
0.1g	VII. Noticed by automobile drivers. Walkers have difficulty keeping balance; weak chimneys break at roof lines; furniture breaks; poor masonry cracks; plaster, loose bricks, stones, tiles, cornices, fall; small slides and caving develop along sand and gravel banks; water becomes turbid with mud; large bells ring; concrete irrigation ditches are damaged.
0.2g	VIII. Affects steering of motor cars. Damage to good unbraced masonry, with partial collapse; some damage to good, somewhat reinforced masonry but none to masonry reinforced against horizontal stresses; walls of stucco and some of masonry fall; chimneys, factory stacks, monuments, towers, and elevated tanks twist and fall; frame houses move on foundations if not bolted down; loose panel walls thrown out; decayed piling breaks off; branches break from trees; flow and temperature of springs and wells change; wet ground and steep slopes crack.
0.3g	
0.4g	IX. Causes general panic. Poor masonry destroyed; good unbraced masonry heavily damages; reinforced masonry seriously damages; general damage to foundations; frame structures, if not bolted, shifted off foundations; frame cracks; serious damage to reservoirs; underground pipes break; alluvial areas crack conspicuously, ejecting sand and mud; earthquake fountains and sand craters develop.
0.5g	
0.8g	X. Destroys most masonry and frame structures. Some well-built wooden structures and bridges destroyed; serious damage to dams, dikes, embankments; large landslides; water is thrown on banks of canals, rivers, lakes; sand and mud shift horizontally on beaches and flat land; rails bend slightly.
1.0g	
2.0g	XI. Puts underground pipelines completely out of service. Rails bend greatly.
3.0g	XII. Distorts lines of sight and level. Damage nearly total; large rock masses displaced; objects thrown into the air.
4.0g	

In Arcata, damage from these earthquakes typically included broken windows, broken chimneys, cracks in plaster and drywall, fallen household objects and store merchandise, and the initiation of small-scale landslides.

Accounts of the 21 December 1954 event indicate that, in addition to the typical damage noted above, water mains were broken, a number of people were injured by falling objects and one death resulted.

It is important to note that these earthquakes were substantially smaller than the maximum credible earthquake. Damage from a maximum credible earthquake will generally include severe damage to masonry structures, broken underground utilities, initiation of large-scale landslides, damage to bridges, wood frame building, dikes, fluid storage tanks, etc. (see Figure 2 for Modified Mercalli Scale Intensity X).

If the magnitude of the maximum credible earthquake in the Arcata area is increased to 8.3 as suggested by recent worldwide faulting events in similar seismic settings, then the maximum ground acceleration values would not be increased significantly. However, the duration of strong ground motion and the size of the area affected by strong ground motion would both increase substantially.

References for this section include: 2, 14, 18, 29, 32, 33, 34, 40, 44, 47, 61, 63, 66, 67, 69, 72, 73, 74, 77, 78, 79, 84, 85, 86, 85 and 97.

3. Seismically-Induced Ground Failure

Soil liquefaction, settlement and slope failure (landslides) are the most common types of ground failure to occur during moderately strong to very strong ground shaking.

Liquefaction involves a sudden loss in strength of a saturated cohesionless soil (predominantly fine-grained sand or poorly graded coarser sand) which is caused by ground movement and vibrations resulting from earthquake-generated seismic waves. The abrupt reduction in shear strength results in temporary transformation of a relatively solid soil mass to a fluid mass. If the liquefied layer is near the surface, the soils supporting foundation elements sink rapidly into the liquefied soil mass. In the case where a liquefied soil mass is overlain by relatively competent soil strata that does not liquefy, the overlying materials can slide off the liquefied mass if not confined. Strong seismic shaking is typically required to initiate soil liquefaction. Large scale liquefaction events have usually been caused by very strong earthquakes or by local earthquakes which generate very high horizontal accelerations.

Liquefaction could present a hazard in portions of the Arcata bottoms area, particularly during strong, long-duration seismic shaking in the wet season when the unconsolidated fine-grained sediments may be saturated. The Liquefaction Potential Map (Plate B) provided is based upon the anticipated texture, degree of consolidation and potential for saturation of soil materials in the study area. The following Liquefaction Hazard Zones have been designated for the Arcata area:

Zone I. High liquefaction hazard area.

Zone II. Moderate liquefaction hazard area.

Zone III. Low to very low liquefaction hazard area.

Settlement may occur in unconsolidated soils during earthquake shaking as the result of a more compact rearrangement of the individual soil particles. Settlements of sufficient magnitude to cause significant structural damage are normally associated with rapidly deposited soil material or

improperly placed or poorly compacted fills. Based on our investigation, significant amounts of settlement caused by earthquake shaking are expected to be restricted to Liquefaction Hazards Zones I and II or isolated areas where recently-placed uncontrolled fill is located.

The Slope Stability Hazard Map (Plate C) outlines areas of relative slope stability hazards due to non-seismic geologic conditions. Since there is extensive evidence that earthquakes can initiate landslides, it is assumed that the relative slope stability groups shown on the Slope Stability Hazard Map also reflect anticipated stability response resulting from destabilizing earthquake forces. Large earthquakes could generate landslides in a variety of geologic settings. Water-saturated colluvial deposits on steep slopes are particularly susceptible to failure during an earthquake. Young sedimentary deposits, having high porosity and low initial strength, are also vulnerable to failure when saturated. The intensity, duration, and mode of seismic shaking will determine the degree to which slope failure will occur.

References for this section include: 33, 36, 54, 93 and 98.

4. Tsunami

Tsunamis or seismic sea waves are long period, high velocity (up to 500 mph) ocean waves generated by vertical displacement of the ocean bottom along a fault during a submarine earthquake. Vertical ocean floor displacement can cause ocean water displacement resulting in the production of waves that travel thousands of miles with destructive force. During the 1964 Alaskan earthquake, tsunamis caused damage in areas more than 1,500 miles from the source area.

Although 234 tsunamis were recorded in the Pacific Ocean between 1900 and 1979, no known damage has occurred in the Arcata area as a result of these events. The three largest tsunamis recorded in this period occurred

in 1946, 1960, and 1964. Only the 1964 tsunami created recordable tide gauge fluctuations in Humboldt Bay. The maximum water elevations recorded in the Humboldt Bay area during the 1964 tsunami were an estimated 9 feet (MLLW) at the U.S. Geological Survey station on the North Spit, 12.4 (MLLW) feet at the Municipal Marina, and 9.7 (MLLW) feet near PG&E's Humboldt Bay power plant. The probable accuracy of these measurements is ± 1 foot. The tsunami produced a wave run-up of about 4 feet above the existing tide level at the North Spit, about 7 feet of run-up on the channel side opposite the bay entrance and about 2 feet at the Eureka Boat Basin.

The lack of damage to Arcata and areas along the shore inside the bay during the 1964 tsunami was probably due to the narrow, restrictive, character of the bay entrance and the long period of the tsunami waves. Only a very narrow segment of the tsunami wave would have been able to enter the bay. As soon as the wave got through the entrance and into the open bay, the wave energy would have dissipated. The wave energy dissipation may be analogous to a venturi effect.

The U.S. Army Waterways Experiment Station, Hydraulics Laboratory has assigned a maximum tsunami runup for the Arcata coast line as great as 30 feet above mean lower low water (combined tsunami and astronomical tide).

References for this section include: 48, 49, 52 and 71.

5. Seiche and Dam Failure Inundation

Seiches are earthquake-generated water waves within enclosed or restricted bodies of water such as lakes, bays and reservoirs. They may be formed by water oscillation as a response to long period ground motion, by instantaneous tilting of the basin, or by large landslides entering an enclosed body of water. The phenomenon might be likened to the sloshing of water in

a bowl or bucket when it is shaken or jarred. The waves can be substantial, occasionally reaching heights of 10 to 20 feet. A seiche in Arcata Bay is not expected to result in significant damage to the City of Arcata. A seiche of substantial height could occur in Arcata Bay only if a currently unknown fault ruptured and abruptly raised one end of the bay to a significant height.

A large seiche in Ruth Reservoir could overtop and potentially destroy Matthews Dam. The result of a catastrophic failure of Matthews Dam would be the inundation of low-lying downstream areas. Portions of the City of Arcata could be inundated following a catastrophic failure of Matthews Dam. Inundation levels would be dependent on a number of factors including reservoir level, hydrologic condition of the Mad River, and how fast the dam fails.

Similar inundation can result during earthquakes from large masses of earth sliding into a reservoir. Although not generated by an earthquake, almost 3,000 lives were lost in Italy in 1963 when a huge landslide entered a reservoir, sending a wave 850 feet above reservoir level opposite the slide area and waves about 330 feet over the crest of the dam.

The near failure of the Van Norman reservoir during the 1971 San Fernando earthquake resulted in the evacuation of 80,000 people that lived below it. In 1973, state legislation was adopted in which the State Office of Emergency Services (OES) required the preparation of inundation maps for reservoirs that could affect populated areas (see Inundation Map, Plate D).

To a lesser degree, seiches set up in fluid storage tanks could result in damage to the tank and subsequent flooding of areas downslope from the tank site. Although failure of a non-hazardous fluid storage tank would not necessarily pose a threat to the City of Arcata, localized areas below a damaged storage tank could be significantly impacted.

6. Slope Stability

Landsliding is a natural process of downslope movement of soil, rock, and rock debris as a mass. The rate of downslope movement of landslide material ranges from tens of miles per hour in the case of mudflow/debris torrent to less than one inch per year in slow-moving earthflows. The rate of landsliding is affected by a number of factors including the following: landslide morphology; the degree of water saturation; groundwater pore pressure; the strength of the soil material along the failure plane(s); the slope angle; the weight, shape, and slope position of the landslide mass; and the type and extent of vegetative cover. The short-term influence of seismic shaking can have a substantial influence on the initiation of, the size of, and the rate of movement of a landslide mass.

The relative hazards of significant landsliding in the Arcata planning area are indicated on the Slope Stability Hazard Map (Plate C). Five slope stability hazard categories were chosen to delineate areas of relative potential for slope failure. These categories are listed and described below. In general, slopes ranging from 0% to 30% are considered "gentle;" 20% to 50% "moderate;" 40% to 90% "steep;" and greater than 80% "very steep."

I. VERY HIGH SLOPE STABILITY HAZARD AREA

Hazard category I includes active and recently active landslides, very steep slopes and other areas that exhibit topography conducive to slope failure.

II. HIGH SLOPE STABILITY HAZARD AREA

Hazard category II includes moderate to very steep slopes and areas where past slope failures have been slightly modified by erosional processes.

III. MODERATE SLOPE STABILITY HAZARD AREA

Hazard category III includes moderate to steep slopes and areas where past slope failures have been significantly modified by erosional processes.

IV. LOW SLOPE STABILITY HAZARD AREA

Hazard category IV includes gentle to moderate slopes that are not likely to be subject to the initiation of slope failure. However, under unusually high soil moisture conditions and/or strong to very strong seismic shaking, landsliding could occur.

V. LANDSLIDE FREE AREA

Hazard category V includes flat-lying to gentle slopes that are not susceptible to slope failure and are not in the path of adjacent areas that are subject to landslides.

On the flank of Fickle Hill, there are many areas where landsliding has occurred in recent times (Category I). Almost all of the rest of the hillside must be classified as high or medium landslide risk areas (Categories II and III). Very little of the Fickle Hill area can be classified as low landslide risk (Category IV).

It is important to point out that the Slope Stability Map delineates natural slope stability hazards. Grading (cuts and fills), drainage alteration, and other activities of man that alter natural conditions can substantially increase slope stability hazards if mitigation measures are not implemented. Therefore, the categories indicated on the map may change as a result of development and other land alteration by man.

References for this section include: 28, 38, 54, 55 and 56.

D. Technical Conclusions

One of the principal objectives of the Seismic Safety Element is to identify and evaluate the different types of seismic hazards that are present in the Arcata vicinity. These analyses form the basis for the recommended goals and policies of the Element. Major conclusions from the technical analyses are as follows:

1. The City of Arcata is located in a part of California considered seismically active.

2. The levels of activity, and potential activity, of the major faults in the Arcata vicinity have been (and will continue to be) evaluated using available published and unpublished data supplemented by local field examinations and aerial photo study. Major conclusions at this time are:

a. The MRFZ is active and is expected to be capable of generating at least a magnitude 7.7 earthquake.

b. Earthquakes can and will occur on other faults in the region. Their effects on the City of Arcata are expected to be less than the effects of earthquakes generated in the MRFZ.

3. If surface fault rupture occurs on the Fickle Hill fault, substantial damage to the City of Arcata can be expected. Severe damage would be expected if surface fault rupture accompanied a magnitude 7.7 earthquake on the Fickle Hill fault.

4. The potential peak ground acceleration in Arcata resulting from a magnitude 7.7 earthquake on the MRFZ is expected to range between .95 g and .74 g. Larger magnitude earthquakes in the MRFZ may increase the size of the affected area and may increase the duration of seismic shaking, but the acceleration value will not be significantly increased. These acceleration values exceed the 1985 Uniform Building Code (UBC) standards.

5. Historically, major earthquakes in the region have typically produced intensities of VI to VII in the Arcata planning area. It is important to note that a maximum credible earthquake of magnitude 7.7 on the MRFZ will provide intensities on the order of X, which is substantially higher than those which have been experienced historically.

6. Earthquake-induced landsliding is considered a significant hazard on, or in the vicinity of, moderately and steeply sloping hillsides in the Arcata area.

7. Liquefaction and settlement are considered significant hazards in that part of the study area underlain by unconsolidated alluvial deposits that are subject to high groundwater conditions.

8. Hazardous tsunamis (seismic sea waves) may occur along the coastal areas and bay margins particularly if tsunami occurrence is coincident with a flood tide.

9. The effects of seiche (oscillating waves in enclosed bodies of water) within storage tanks may be significant. The potential for a damaging seiche within northern Humboldt Bay is considered unlikely.

10. If Matthews Dam (on the Mad River) failed catastrophically, low-lying areas in the Arcata vicinity could be inundated.

CITY OF ARCATA
1987 SEISMIC SAFETY ELEMENT
POLICIES AND IMPLEMENTATION MEASURES
ADOPTED DECEMBER 2, 1987

POLICIES

A. General Seismic Hazards

1. The City, in conjunction with local, state and federal agencies, should begin a program of disseminating available seismic safety information to citizens, property owners, and especially to developers.
2. The City should provide for the maintenance and upgrading of disaster response plans.
3. The City should provide for periodic review and upgrading of the Seismic Safety and Safety Element.
4. The City should provide for more detailed scientific analyses of seismic hazards in the study area.
5. To the extent practical, urban development should not be sited in areas susceptible to excessive geologic hazards.

B. Surface Fault Rupture Hazard

1. The City should follow the current Alquist-Priolo Special Studies Zone policy and should incorporate the Geologic Hazard Land Use Matrix to minimize surface fault rupture hazard exposure.
2. The City should provide for a detailed field study of the Fickle Hill fault, including subsurface trenching, to provide a more refined evaluation of the surface rupture potential of the fault.

C. Ground Shaking Hazard

1. The City should incorporate the most recent advances in earthquake engineering into construction regulations

for new development.

2. The City should provide for the identification and evaluation of existing structural hazards with an emphasis placed on the earthquake-resistant design of the buildings.
3. The City should evaluate the competency of road and utility networks to withstand seismic shaking.

D. Liquefaction Hazards

The City should restrict construction in areas highly susceptible to liquefaction.

E. Tsunami Hazards

The City should prohibit critical facilities from being located in low-lying coastal and inland portions of the study area subject to potential tsunami hazards.

F. Seiche and Dam Failure Inundation Hazard

The City should develop an early-warning system and evacuation plan for areas that lie within the inundation potential area (see Plate D) in the unlikely event of a catastrophic failure of Matthews Dam.

G. Slope Stability Hazards

1. The City should regulate land use in areas of significant slope stability hazards.

IV. IMPLEMENTATION MEASURES

A. General Seismic Hazards

1. Develop an information release program to familiarize the citizens of the region with the Seismic Safety and Safety Elements. Special attention should be afforded to those groups particularly susceptible to seismic hazards, including but not limited to, school districts, hospitals, agencies involved with the aged, and agencies involved with handicapped persons. These agencies should be encouraged to develop educational programs of their own relative to hazard awareness. The conclusions and recommendations of these elements, particularly the mapping of areas of high geologic risk, should also be provided to land developers and those involved in the real estate profession.
2. A public file of all geologic and soil investigations conducted in the City of Arcata should be maintained in the offices of the Community Development Department.
3. Maintain a disaster response program for the City of Arcata. Objectives of the program should be:
 - a. To save lives and protect property.
 - b. To provide a basis for direction and control of emergency operations.
 - c. To provide for the continuity of government.
 - d. To repair and restore essential systems and services (e.g. emergency water supplies).
 - e. To provide for the protection, use and distribution of remaining resources.
 - f. To coordinate operations with the civil defense emergency operations or other jurisdictions.
 - g. To provide for a maximum degree of self-sufficiency by the City in the event of a major disaster.

Alquist-Priolo Special Studies Zone.

4. Planning staff should maintain a map and inventory of geologic studies to reflect the presence or absence of surface fault features in specific areas of the City.
5. As additional Alquist-Priolo studies are conducted, planning staff should determine when sufficient information exists to justify application to the State requesting revision of the City's Alquist-Priolo Special Studies Zone boundaries.
6. The City shall encourage further research on the Fickle Hill Fault Zone by Humboldt State University and others. The City shall explore the possibility of funding a comprehensive study of the fault system through a cooperative effort involving the owners of vacant lands affected by the Alquist-Priolo and Potentially Active Fault Zones.

C. Ground Shaking Hazard

1. Adopt new ordinances and amend existing ordinances which require the incorporation of seismic safety and safety considerations in new developments under the City's jurisdiction, such as adopting the Geologic Hazards Land Use Matrix (see Section VIII. Appendix A).
2. Adopt each new edition of the Uniform Building Code as it becomes available. The knowledge about earthquake resistance of structures is constantly being refined.
3. Utilize the most current seismic design criteria in the construction of new public buildings. Buildings meant to accomodate activities and equipment related to public safety, especially police, fire and communications services, should be constructed to ensure continued operation and availability of services after a maximum credible earthquake.
4. Using the geological data provided in this Seismic Safety Element, amend Chapter 23, Section 2314, Earthquake Regulations, of the Uniform Building Code to account for the expected maxium ground accelerations of the recommended design earthquakes. Non-critical facilities should be designed to remain standing following a magnitude 6.5 earthquake originating in the

5. Conduct periodic earthquake, fire, and flooding emergency drills. These drills should be coordinated on a regional basis in cooperation with all involved jurisdictions.
6. Upon adoption of the Seismic Safety Element, a review committee should be established to oversee the implementation of the element and to advise the Council of implementation progress. This committee should be composed of the Community Development Director, the Director of Public Works, Senior Building Inspector, Police Chief and Fire Chief, and other relevant agencies.
7. The Seismic Safety Element should be updated every 5 years or whenever substantially new scientific evidence becomes available.
8. Institute a strong-motion instrumentation program for buildings over four (4) stories in height, if such buildings are anticipated.
9. Maintain the present open space/agricultural or extremely low density residential General Plan land use designations of potentially hazardous areas.
10. The maps of geologic hazards included in the Seismic Safety Element (Plates A through D) should be adopted by reference in the Geologic Hazards Review section of the Land Use and Development Guide (Chapter IV, Article 3). Site-specific reports prepared in accordance with the Geologic Hazard Land Use Matrix shall be considered amendments to the maps when a conflict between the general map and the site-specific report is found.

B. Surface Fault Rupture Hazard

1. Retain the City's existing Alquist-Priolo Special Studies Zone process to minimize surface fault rupture hazard exposure.
2. Adopt the Geologic Hazards Land Use Matrix so that surface fault rupture hazards are properly evaluated.
3. The Geologic Hazard Land Use Matrix (Appendix A) reporting requirements should be followed for new development within 300 feet of the Potentially Active Faults (PAF) shown on Plate A that fall outside of the

MRFZ. Critical facilities should be designed to function at peak efficiency after a magnitude 7.7 earthquake in the MRFZ. Amending Section 2314 involves revising the basic lateral force equation in the section, and requires analysis by a qualified structural engineer. These revisions are intended to aid in the earthquake-resistant design of new structures and to be used in retrofitting older, less earthquake-resistant buildings.

5. In order to minimize risks, new roads, bridges, and overpasses should be engineered to incorporate high seismic design criteria, and existing bridges and overpasses should be periodically inspected and retrofitted. Caltrans should review its facilities and roadways within the study area to determine the potential impact of expected earthquakes and associated ground accelerations, and should forward comments to the City. The Circulation Element of the General Plan and alternative evacuation routes should be revised, if necessary.
6. The Pacific Gas and Electric Company should review its facilities and distribution/transformation networks and centers to determine the potential impact of expected earthquakes, and should forward comments to the City. PG & E should also review their gas and power lines for potential fire hazards resulting from earthquake damage.

D. Liquefaction Hazards

1. Site-specific investigations should be required prior to the construction of all high intensity and/or public use structures within the City. Site-specific investigations should assess the potential for liquefaction induced ground failures and suggest measures to mitigate the hazards from vertical and/or horizontal displacement.

If it is found that engineering techniques cannot mitigate the hazards to within acceptable risk levels appropriate with the intended land use, the location of the proposed development should be reconsidered.

2. Require site-by-site soils and engineering geologic studies in areas of potential liquefaction and settlement and evaluate these potential hazards as defined in the Geologic Hazards Land Use Matrix

(Section Vlll. Appendices) for areas shown on Plate B.

3. No critical facilities should be permitted in areas of high liquefaction potential (see Plate B). Various types of development will require detailed site investigations which address the potential for liquefaction and settlement (see Geologic Hazards Land Use Matrix, Section Vlll).

E. Tsunami Hazards

Because currently available information regarding inland limits of tsunami inundation in the Arcata area is limited, tsunami hazards should be evaluated on a site specific basis for all critical facilities located in low lying areas. Current mitigation for tsunami hazards is the Tsunami Watch and Warning System operated by the U.S. Commerce Department's National Oceanic and Atmospheric Administration and implemented by the Humboldt County Office of Emergency Services.

F. Slope Stability Hazards

1. Maintain the regulations of the Hillside Development Standards which prohibit development involving significant alteration of natural land forms or surface conditions on slopes greater than 25 percent.
2. No development should be permitted in areas of very high, high, or moderate landslide risk or where the building official deems necessary, without required slope stability investigation. The slope stability investigation should be consistent with the Geologic Hazards Land Use Matrix (see Section Vlll. Appendix A) for all proposed development in land slide potential areas, including road construction.

These investigations should assess the stability of the site under both normal and seismic conditions and include recommended mitigation measures. If it is found that the hazards cannot be mitigated to an acceptable risk level appropriate with the intended land use, then the proposal should be denied.

3. The Public Works Department should designate a responsible person to coordinate the ongoing implementation of those geologic hazard policies which

will require engineering and/or geologic expertise. Under this person's direction, procedures should be established for: (1) requiring detailed geologic and/or soils investigations so that over time a detailed data base can be developed for specific areas; (2) reviewing of such investigations; (3) establishing a systematic filing procedure for such investigations so that over time a detailed data base can be developed for specific areas; (4) establish a standardized landslide and coastal erosion report procedure and format; and (5) develop and make available to the public upon request information on potential slope stability problems and mitigation measures designed for the City.

V. REFERENCES

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VI. GLOSSARY

An attempt has been made to define all technical words contained in the text. If a technical word is not defined, often the word can be found in a standard dictionary. In using the glossary, the reader will note that many technical words appear within the definitions themselves. Definitions of these words can also be found in the glossary.

Acceleration. A measure of change in velocity. Used here as a measure of ground acceleration in units of g (% of gravity) caused by an earthquake.

Active fault. A fault that has moved recently and which is likely to move again. For planning purposes, "active fault" is usually defined as one that shows movement within the last 11,000 years and can be expected to move within the next 100 years.

Alluvial fans. Alluvial fans are built by rivers flowing from mountains onto lowlands. They are low cone-shaped heaps, steepest near the mouth of the valley, and sloping gently outward with ever decreasing slope.

Alluvium. A general term for the sediments laid down in river beds, floodplains, lakes, fans at the foot of the mountain slopes, and estuaries during relatively recent geologic times.

Amplification. The increase in earthquake ground motion that may occur to the principal components of seismic waves as they enter and pass through different earth materials.

Anticline. An upfold or arch of rock strata formed by internal earth pressure forming a shape like the roof of a house. Erosion could alter this shape leaving only the inclined strata.

Attitude (of rock structures). A term including the terms dip and strike. The attitude of the flat surface of a sedimentary bed, whether inclined or not, is referred to the horizontal plane. Dip is its slope inclination (in degrees) from this plane, and is measured with a clinometer. Strike is the compass bearing on the line of intersection of its surface with horizontal plane. The terms may also apply to faults, veins, and dikes.

Bed. The smallest division of a stratified series and marked by a more or less well-defined plane from its neighbors above and below.

Bedding plane. In sedimentary or stratified rocks, the division planes which separate the individual layers, beds or strata.

Bedrock. Any solid rock underlying soil, sand, clay, etc.

Colluvium. Soil deposited by soil creep, landslides and surface wash.

Compaction. Decrease in volume of sediments, as a result of compression of sediments deposited above them.

Competent beds. Those beds or strata which, because of massiveness or inherent strength, are able to lift not only their own weight but also overlying rock. Therefore, such rock material is especially able to withstand failure such as landsliding.

Conglomerate. A rock composed of larger fragments (such as pebbles or cobbles) set in a matrix of finer material (such as sand, silt, and/or clay).

Conjugate. Said of faults that are of the same age and deformational episode.

Consolidated material. Soft or hard rock which requires some medium of loosening at the excavation site before it can be handled. The more loosening

required (i.e., blasting as opposed to bulldozing), the more consolidated the material.

Contemporaneous. Formed, existing, or originating at the same time.

Continental deposits. Deposits laid down on land as opposed to one laid down in marine water.

Creep fault. See "Fault creep."

Critical facility. Includes facilities housing or serving many people or otherwise posing unusual hazards in case of damage from or malfunction during an earthquake, such as hospitals, fire, police, and emergency control centers, hazardous substance storage, power plants, reservoirs, natural gas storage tanks, power and communication facilities, and schools.

Cross bedding. The arrangement of narrow layers of sedimentary rock such that layers are at angles to rather than parallel to the other layers.

Damping. A resistance to vibration that causes a progressive reduction of motion with time or distance.

Deformation of rocks. A change in the original form or volume or rock masses produced by faulting, folding or other tectonic forces.

Differential settlement. Loss of strength or the loss of water and sand through liquefaction often does not occur evenly over broad areas. thus the ground settles different amounts in adjacent spots. Can be very destructive to buildings.

Dip. See "Attitude."

Dip slip. Fault displacement parallel to the dip of the fault. See "Attitude" and "Slip."

Displacement. The dislocation of one side of a fault relative to the other side resulting from fault movement.

Earth flow. A slow flow of earth lubricated with water. Earth flows may be discriminated from earth slumps by reason of their greater mobility.

Earthquake. Perceptible trembling to violent shaking of the ground, produced by sudden displacement of rocks below and at the earth's surface.

Earthquake focus. See "Focus."

Earth slump. See "Earth flow."

Elastic limit. The maximum stress that a material can withstand without undergoing permanent deformation either by solid flow or by rupture.

Elasticity. The property or quality of being elastic, that is, an elastic body returns to its original form or condition after a displacing force is removed.

Eocene. An epoch of the lower Tertiary period. It ranges from 37 to 38 million to 53 to 54 million years before the present.

Epicenter. The geographical location of the point on the surface of the earth that is vertically above the earthquake focus.

Fan, alluvial. See "Alluvial fan."

Fault. A fracture in the earth's crust forming a boundary between masses that have shifted.

Fault block. A body of rock bounded by one or more faults.

Fault creep. Very slow periodic or episodic movement along a fault trace unaccompanied by quakes.

Faulting. The movement which produces relative displacement of adjacent rock masses along a fracture.

Fault scarp. The cliff formed by a fault. Most fault scarps have been modified by erosion since faulting.

Fault set. Two or more parallel faults within an area.

Fault slip or slippage. The relative displacement of formerly adjacent points on opposite sides of a fault. Also known as fault creep.

Fault system. Two or more fault sets formed at the same time.

Fault surface. The surface along which dislocation has taken place.

Fault trace. The intersection of a fault and the earth's surface as revealed by dislocation of fences, roads, by ridges and furrows in the ground, etc.

Fault zone. A fault instead of being a single clean fracture, may be a zone hundreds or thousands of feet wide; the fault zone consists of numerous interlacing small faults or a confused zone of gouge, breccia or other material.

Fault, normal. See "Normal fault."

Fault, reverse. See "Reverse fault."

Fault, right-lateral. See "Right-lateral fault."

Fault, thrust. See "Thrust fault."

Fissure. An extensive crack, break, or fracture in the rocks.

Flexuring. Synonymous with folding.

Focal depth. Depth of an earthquake focus below the ground surface.

Focus. The point within the earth which marks the origin of the elastic waves of an earthquake.

Fold. A bend in rock strata.

Formation. A rock body or an assemblage of rocks which have some character in common; applied to a particular sequence of rocks formed during one epoch; a rock unit used in mapping.

Fracture. Breaks in rocks due to intense faulting or folding.

Free face. A sloping surface exposed to air or water such that there is little or no resistance to lateral movement of earth materials.

Frequency. The number of seismic wave peaks which pass through a point in the ground in a unit of time. Usually measured in cycles per second.

Friable. A term applied to rocks that are easily crumbled or pulverized.

g. Acceleration due to gravity (%). A measure of ground motion. A falling object accelerates at a rate of 1.0 g's or 32 ft/sec². Driving an automobile

through a tight turn at maximum speed, a force of 0.7 g's is typically exerted on the driver and passengers.

Geology. The science which treats of the earth, the rocks of which it is composed, and the changes which it has undergone or is undergoing.

Geophysical surveys. The use of one or more physical techniques to explore earth properties and processes.

Gouge material. Finely ground material occurring between the walls of a fault, the result of grinding movements.

Graywacke. A hard, dark-colored, sandstone composed primarily of highly angular quartz and feldspar in a clay matrix. Usually contains significant quantities of rock fragments.

Ground cracking. Cracks usually occurring in stiff surface materials resulting from differential ground movement.

Ground failure. A situation in which the ground does not hold together such as in landsliding, mud flows, liquefaction and the like.

Ground lurching. Undulating waves in soft saturated ground that may or may not remain after the earthquake.

Ground shaking. The reaction of the ground to the earthquake.

Ground strength. The limiting stress that ground can withstand without failing by rupture or continuous flow.

Hazardous building. A building that may be hazardous to life in the event of an earthquake because it:

- (1) Was construction prior to the adoption and enforcement of local codes requiring earthquake resistant design of buildings;
- (2) Is constructed of unreinforced masonry; or,
- (3) Exhibits any one of the following characteristics:
 - o Exterior parapets and ornamentation that may fall on passers-by;
 - o Exterior walls that are not anchored to the floors, roof, or foundations;
 - o Sheeting on roofs or floors incapable of withstanding lateral loads;
 - o Large openings in walls that may cause damage from torsional forces; or,
 - o Lack of an effective system to resist lateral forces.

Hazardous material. An injurious substance, including pesticides, herbicides, toxic metals and chemicals, liquified natural gas, explosives, volatile chemicals, and nuclear fuels.

Hummocky. Lumpy land, or in small uneven knolls. This condition is a sign of previous extensive landsliding.

Hypocenter. That point within the earth which is the center of an earthquake and the origin of its elastic waves.

Imbricate. A tectonic structure displayed by a series of nearly parallel and overlapping minor thrust faults, high-angle reverse faults, or slides and characterized by rock slides, sheets, plates, blocks, or wedges that are approximately equidistant and have the same displacement and that are all steeply inclined in the same direction (toward the source of stress).

Inactive fault. A fault which shows no evidence of movement in recent geologic time and no potential for movement in the relatively near future.

Incompetent beds. Opposite of competent beds.

Inelastic deformation. Permanent deformation of materials either by flow, creep, or rupture.

Intensity. A nonlinear measure of earthquake size at a particular place as determined by its effect on persons, structures, and earth materials. The principal scale used in the United States today is the Modified Mercalli, 1956 version. Intensity is a measure of effects as contrasted with magnitude which is a measure of energy. They are not the same.

Inundation. Flooding caused by water topping a dam or water released by dam, reservoir, levy or other break.

Isoseismic line. An imaginary line connecting all points on the surface of the earth where an earthquake shock is of the same intensity.

Landslide. A general term for a falling mass of soil or rocks.

Landsliding. The perceptible downward sliding or falling of a relatively dry mass of earth, rock, or mixture of the two. Often loosely used to also include sliding of wet earth masses such as mud slides and earth flows.

Left-lateral fault movement. Generally horizontal movement in which the block across the fault from an observer has moved to the left.

Lenticular. Shaped approximately like a double convex lens. When a mass of rock thins out from the center to a thin edge all around, it is said to be lenticular in form.

Lineament. Straight or gently curved, lengthy features of the earth's surface, frequently expressed topographically as depressions or lines of depressions; these are prominent on relief models, high-altitude air photographs, and radar imagery.

Liquefaction. A process by which a water saturated sand lense loses coherence when shaken. Involved is the collapse of sand grains into intergranular voids which induces an increase in pore pressure and loss of strength. This loss of strength leads to a quicksand condition in which objects can either sink or float, depending on their density.

Lithology. The description of rock composition and texture from observation of hand specimens or outcrops.

Lower low water. The lower of the two low waters of any tidal day.

Magnitude. The rating of a given earthquake is defined as the logarithm of the maximum amplitude on a seismogram written by an instrument of specified standard type at a distance of 62 miles from the epicenter. It is a measure of the energy released in an earthquake. The zero of the scale is fixed arbitrarily to fit the smallest recorded earthquakes. The scale is open ended but the largest known earthquake magnitudes are near $8\frac{3}{4}$. Because the scale is logarithmic, every upward step of one magnitude unit means a $31\frac{1}{2}$ fold increase in energy release. Thus, a magnitude 7 earthquake releases $31\frac{1}{2}$ times as much energy as a magnitude 6 earthquake and a magnitude 8 releases approximately 1000 times the energy as a magnitude 6 earthquake. Magnitude is not the same as intensity.

Maximum credible earthquake. The most severe earthquake that appears capable of occurring, based on present information, including (a) the seismic history of the area; (b) the length of significant faults within 100 kilometers;

(c) the type(s) of faults; and (d) the tectonic or structural history of the region.

Melange. A mixture or complex of rocks.

Micro earthquake. A very small earthquake having a magnitude of 2 or less on the Richter scale.

Microseismic event. An earthquake or man-induced vibrations observable only with instruments.

Miocene. An epoch of the upper Tertiary period. It ranges from 12 million to 26 million years before the present.

MLLW. Mean lower low water. The average height or elevation of the lower low waters over a 19-year period.

Modified Mercalli. See "Intensity."

Morphology, slope. See "Slope morphology."

Mud flow or mud slide. A flowage of heterogeneous debris lubricated with a large amount of water.

Normal fault. Vertical movement along a sloping fault surface in which the block above the fault has moved downward relative to the block below.

Period, natural. See "Natural period."

Period predominant. See "Predominant period."

Plastic deformation. Under some conditions solids may bend instead of shearing or breaking as a result of seismic and geologic forces.

Pliocene. The latest epoch in the Tertiary period. It ranges from 7 to 10 million to 2 to 3 million years before the present.

Potentially active fault. (1) A fault that last moved within the Quaternary Period (the last 2,000,000 years); (2) A fault which, because it is judged to be capable of ground rupture or shaking, poses an unacceptable risk for a proposed structure.

Residual soil. A soil deposit formed by the decay of rock in place.

Reverse or thrust fault. Vertical or nearly horizontal movement along a sloping fault surface in which the block above has moved upward or over the block below the fault.

Right-lateral fault movement. Generally horizontal movement in which the block across the fault from an observer has moved to the right.

Runup. Elevation of maximum inundation, usually measured above MLLW, resulting from a tsunami.

Sag ponds. Ponds occupying depressions along active faults. The depressions are due to uneven settling of the ground.

Sand boils. Turgid upward flow of water and some sand to the ground surface resulting from increased groundwater pressures when saturated cohesionless materials are compacted by earthquake ground vibrations.

Scarp. An escarpment, cliff, or steep slope of some extent along the margin of a plateau, terrace, bench, and at the top of a slide.

Sediment. Solid material settled from suspension in a liquid.

Sedimentary rocks. Rocks. commonly stratified, formed by the accumulation of sedimentation in water or from air.

Seiche. An earthquake-induced wave in a lake, reservoir, lagoon or bay.

Seismic. Pertaining to an earthquake or earth vibration, including those that are artificially induced.

Seismograph. An instrument that writes a permanent continuous record of earth vibrations.

Seismology. The science of earthquakes and related phenomena.

Seismometer. A device which detects vibrations of the earth, and whose physical constants are known sufficiently for calibration to permit calculation of actual ground motion from the seismograph.

Settlement. (a) the gradual downward movement of an engineering structure, due to compression of the soil below the foundation. See also "Differential settlement."

Shear. A mode of failure whereby two adjacent parts of a solid, slide past one another parallel to the plane of contact. To subject a body to shear, similar to the displacement of the cards in a pack relative to one another.

Shear strength. The internal resistance of a body to shear stress.

Shear stress. That component of stress which acts tangential to a plane through any given point on a body.

Slip, fault. See "Fault slip."

Strata. Layers of sedimentary rocks.

Strength, ground. See "Ground strength."

Strike. Fault displacement parallel to the strike of the fault. See "Attitude" and "Slip."

Strong ground motion. Ground motion produced by a "strong" earthquake or one capable of producing damage to structures. The magnitude of such an earthquake may vary considerably according to the character of the earthquake.

Structural feature. Features produced in the rock by movements after deposition, and commonly after consolidation, of the rock.

Subsidence. A shrinking of a large area of land, usually observed as a shrinkage.

Surface rupture. A break in the ground's surface and associated deformation resulting from the movement of a fault.

Syncline. A trough-shaped fold in rocks in which the strata dip inward from both sides toward the axis. The opposite of anticline.

Tectonic. Pertaining to or designating the rock structure and external forms resulting from the deformation of the earth's crust. Pressures causing such deformations often result in earthquakes.

Tertiary. The first period of the Cenozoic era (after the Cretaceous of the Mesozoic era and before the Quaternary), thought to have covered the span

of time between 65 and three to two million years ago. It is divided into five epochs: the Paleocene, Eocene, Oligocene, Miocene, and Pliocene.

Topography. The physical features of the land, especially its relief and contour.

Trace, fault. See "Fault trace."

Thrust fault. See "Reverse fault."

Tsunami. A sea wave produced by large areal displacements of the ocean bottom, often the result of earthquakes or volcanic activity. Also known as seismic sea waves.

Unconformity. In sedimentary rocks sometimes strata of intermediate age between younger and older rocks are absent. This is usually caused by total erosion of the middle-aged sediment before the younger sediment was deposited.

Unconsolidated material. Opposite of "Consolidated material."

Undulating waves. Waves that rise and fall.

Water table. The upper surface of a zone of water saturation within the ground.

VII. PLATES

Plate A	Fault Map
Plate B	Liquefaction Potential Map
Plate C	Slope Stability Hazard Map
Plate D	Mathews Dam Failure Inundation Map

These plates are adopted as part of this document. They are available for inspection at the Arcata Planning Department.

VIII. APPENDICES

A. Appendix A - Geologic Hazards Land Use Matrix

The purpose of these regulations is to ensure that risks to life and property in high and potentially high geologic hazard areas shall be minimized and neither create nor contribute significantly to erosion, geologic instability or destruction of development sites or surrounding areas.

The Geologic Hazards Land Use Matrix shall apply throughout the City of Arcata. This matrix is modelled after the Geologic Hazards Land Use Matrix that is part of the Humboldt County General Plan (Chapter 3, page 20, figure 3-5, of the Humboldt County General Plan, 1984).

1. Modifications Imposed by Geologic Hazards Land Use Matrix

The provisions of the Geologic Hazards Matrix shall be in addition to requirements imposed by all other Zoning Regulations. Whenever the provisions of these regulations conflict with or are inconsistent in application with any other regulations, including any conflict with the City Grading Ordinance (Chapter 70 of the Uniform Building Code, current edition), the most restrictive regulations shall apply.

2. Report Requirements

Proposed new development shall be reviewed, approved and sited in accordance with the "Geologic Hazards Land Use Matrix," Figure 3.

Engineering geologic and/or soil engineering reports shall be required according to the following schedule:

GEOLOGIC HAZARD LAND USE MATRIX

BUILDING TYPE/LAND USE			Earthquake Shaking Hazard	Fault Rupture Hazard*		Slope Stability Hazard**				Liquefaction Potential***		
				SSZ	PAF	Low		High		Low	High	
						V	IV	III	II&I	III	II	I
CRITICAL	Hazardous	Hazardous substance storage, reservoirs, natural gas storage tanks.	R1	R2	R2	D	D	R1	R1	R1	R1	P
	Essential	Hospitals, fire and police stations, emergency control centers, power plants, power and communication substations, schools, theaters										
	Private	Auditoriums, hotels, large motels, major office buildings, high density residential										
NON CRITICAL	Moderate Risk	Residential structures on existing lots with footing loads greater than typical two story wood frame dwellings or residential structures with three stories or more	D	R2	D	D	D	R2	R1	D	R1	R1
		Major Subdivisions	D	R2	R2	D	R2	R1	R1	D	R1	R1
		Heavy Industrial	R2	R2	R2	D	R2	R2	R1	R1	R1	R1
	Low Risk	Multi-family structures greater than 4-plexes	D	R2	D	D	D	R2	R1	D	R1	R1
		Minor Subdivisions	D	R2	D	D	D	R2	R1	D	R1	R1
		Light industrial, warehousing, commercial	D	R2	D	D	D	R2	R2	D	R1	R1
		Residential wood frame structures two stories or less on existing lots	D	D	D	D	D	R2	R2	D	D	D

P - Development Prohibited

R1 - Engineering geologic report and soils engineering report required.

Engineering geologic report must be prepared by a Certified Engineering Geologist.

Soil engineering report may be prepared by a Registered Civil Engineer® with appropriate geotechnical knowledge and experience or by a Certified Engineering Geologist® with appropriate geotechnical knowledge and experience.

R2 - Engineering geologic report required.

Engineering geologic report may be prepared by a Registered Geologist® with appropriate geotechnical knowledge and experience.

D - Report requirement is left to the discretion of City Building Inspector.

* - SSZ Refers to Alquist-Priolo Special Study Zone.

PAF Refers to Potentially Active Fault.

See Fault Map and text.

** - See Slope Stability Hazard Map.

*** - See Liquefaction Potential Map.

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a. 'R1' Report Requirements

(1) An engineering geologic report and a soil engineering report shall be prepared for the classes of development and hazard areas indicated by 'R1' in the Geologic Hazards Land Use Matrix.

(2) The engineering geologic report shall be prepared by a certified engineering geologist licensed in the State of California. The soil engineering report shall be prepared by a registered civil engineer licensed in the State of California having appropriate geotechnical knowledge and experience* or by a certified engineering geologist licensed in the State of California having appropriate geotechnical knowledge and experience.*

b. 'R2' Report Requirements

(1) A engineering geologic report shall be prepared for the classes of development and hazard areas indicated by an 'R2' in the Geologic Hazards Land Use Matrix.

(2) The reports required under this subsection shall be prepared by a registered geologist licensed in the State of California having appropriate geotechnical knowledge and experience.*

(3) It is incumbent upon the project engineer to consult a registered geologist should it become apparent that an adequate subdivision design or structural solution requires additional geologic input. If, after preliminary investigation of the project site and the surrounding terrain, the

*Appropriate technical knowledge and experience refers to formal training and practical applied experience in the field.

engineer concludes that no geological consultation is required, the engineer shall provide a written statement that such an evaluation is not required. It is incumbent upon the project geologist to recommend that a soils engineering report shall be prepared when it becomes apparent that soils mechanics analyses are needed.

c. 'D' Discretionary Report Requirements

The Chief Building Official and/or City Engineer shall determine report requirements for the classes of development and hazard areas indicated by a 'D' in the Geologic Hazards Land Use Matrix. The criteria for determining whether or not a report is required when it is designated in the Geologic Hazard Land Use Matrix as discretionary include the following; however, where evaluation of the items listed below is inconclusive, a statement is required by a registered engineer that a geologic or soil report is not required for the safety of the project:

(1) Criteria for requiring a report shall include:

- (a) a site inspection by the building inspector;
- (b) a review of geologic maps and reports covering the area;
- (c) an evaluation of the potential for the development to adversely affect adjacent property or improvements;
- (d) a consideration of the degree of public exposure to risk;
- (e) a consideration of the size and scale of the proposed development; or

(f) for development within the Coastal Zone, a consideration of certified local coastal plan policies.

(2) A soil engineering report is indicated when one or more of the following conditions exist or are proposed:

(a) depth (or height) of cut or fill is three (3) feet or greater;

(b) fill is used to support structural footings;

(c) engineered cut or fill is required;

(d) soils are or may be subject to significant shrink-swell; or

(e) project area is underlain by material that may be subject to settlement or subsidence.

(3) An engineering geologic report is indicated when one or more of the following conditions exist or are proposed:

(a) finish cut or fill slope faces with vertical heights in excess of 10 feet;

(b) onsite natural slopes steeper than five (5) horizontal to one (1) vertical;

(c) existing cut slopes having a vertical height in excess of ten (10) feet;

(d) existing stream banks in excess of ten (10) feet;

(e) significant existing or suspected seismic hazards;

(f) areas that are underlain by landslides or soil creep or by rock material susceptible to landslide or creep activity;

(g) areas that are underlain by materials that may be subject to settlement or subsidence; or

(h) areas subject to drifting or loose sand.

d. Report Waiver

The report requirements of subsections 2 (a) and (b) may be waived or the contents modified by appropriate City Officials when:

(1) An adequate geologic and/or soil assessment at a suitable scale already exists for similar project measures on the site proposed for development.

(2) Reports are not indicated under the criteria listed in subsection 2(c).

e. When a report is required pursuant to the Alquist-Priolo Fault Hazard Regulations of this ordinance, it should be combined with the reports required under this part where feasible.

3. Contents of Reports

a. Engineering Geologic Report

The above required engineering geologic reports, 'R1' and 'R2' shall provide a geological reconnaissance and evaluation of the project site

and surrounding terrain. The degree of analysis should be appropriate to the degree of potential risk presented by the site and the magnitude of the proposed project. Reports shall be prepared in accordance with the California Division of Mines and Geology (CDMG) Note #44, "Recommended Guidelines for Preparing Engineering Geologic Reports." CDMG Notes #37, #43 and #49 shall be utilized as applicable when seismic or fault rupture hazards are identified as concerns.

In citing the CDMG Notes, it is not the intent of the City to seek lengthy dissertations on the area geology, but rather to provide uniform outlines to serve as checklists with points to be discussed as applicable.

b. Soil Engineering Report

The above required soil engineering report shall describe the nature of the subsurface soils and any soil conditions which would affect the design and/or layout of the proposed development. The report shall include the locations and logs of test borings and percolation test results if on-site sewage disposal is proposed. The report shall delineate areas or issues of concern which require additional engineering or geologic evaluation. These reports shall, as a minimum, be prepared in accordance with the Uniform Building Code Appendix Chapter 70, Excavation and Grading, and/or Chapter 29, Excavations, Foundations and Retaining Walls, as applicable.

c. Supplementary Information for Reports for Development located in the Coastal Zone.

(1) Historic, current and foreseeable shoreline erosion, including investigation of recorded land surveys in addition to the use of historic maps and photographs where available and possible changes in shore configuration and sand transport;

(2) Ground and surface water conditions and variations, including hydrologic changes caused by the development (i.e., introduction of sewage effluent and irrigation water to the groundwater system; alterations in surface drainage);

(3) Potential erodibility of site and mitigating measures to be used to ensure minimized erosion problems during and after construction (i.e., landscaping and drainage design);

(4) Detailed mitigation measures or alternative solutions for avoiding potential impacts; and

(5) Professional conclusions as to whether the project can be designed so that it will neither be subject to nor contribute to significant geologic instability throughout the life span of the project.

4. Development Standards

a. The applicant shall either provide additional information as recommended by the geologic and/or soils report, or modify the proposed development to avoid identified areas of significant geologic hazard. The proposed development shall be sited, designed and constructed in accordance with the recommendations of the report(s) in order to minimize risk to life and property on the project site and for any other affected properties.

b. Projects shall be constructed in accordance with Uniform Building Code Section 2312, Earthquake Regulations, as a minimum. As referred to in UBC Section 2312, the seismic zone boundaries shall be defined as follows: UBC Seismic Zone 4 applies south and west of the Grogan Fault. The Grogan Fault is located approximately 15 miles northeast of Arcata.

c. Within the coastal zone, the following shall also apply:

(1) Developments shall be sited and designed to minimize stability and structural hazards for their expected economic life spans while minimizing alteration of natural land forms;

(2) Bluff and shoreline developments (including related storm runoff, irrigation, wastewater disposal and other activities and facilities accompanying such development) shall not create nor contribute significantly to problems of erosion or geologic instability on the site or on surrounding geologically hazardous areas;

(3) Alteration of shoreline features and bluff tops, faces, or bases by excavation or other means shall be minimized. Retaining walls shall be allowed only to stabilize slopes, not for sea walls.

B. Appendix B - Alquist-Priolo Special Studies Zone Act Requirements

1. Purpose

The Alquist-Priolo Special Zones Act was signed into law December 22, 1972, and went into effect March 7, 1973. The Act, codified in the Public Resources Code as Division 2, Chapter 7.5, has been amended four times. The purpose of this Act is to prohibit the location of structures intended for human occupancy across the traces of active faults and to mitigate thereby the hazard of fault-rupture (Section 2621.5).

2. Applicability of the Alquist-Priolo Fault Hazard Regulations

The Alquist-Priolo Fault Hazard Regulations shall apply to lands that are within Special Studies Zones delineated on maps by the State Geologist. These regulations shall also apply to lands located within Special Study Zones delineated on maps that are officially adopted, revised or issued by the State Geologist in the future.

3. Modifications Imposed by the Alquist-Priolo Fault Hazard Regulations

The provisions of the Alquist-Priolo Hazard Regulations shall apply in addition to regulations imposed by the principal zoning, development regulations, and other special area combining regulations.

4. Special Permit Required

Development may be approved in an area subject to the Alquist-Priolo Fault Hazard Regulations upon approval of a Special Permit (see below).

5. Geologic Fault Evaluation Report Requirement

Application for a Special Permit for any of the following types of development shall be accompanied by a geologic Fault Evaluation Report (FER) prepared by a geologist registered in the State of California, which is directed to the issues of potential surface fault displacement through the project site, unless such report is exempt or waived:

a. Parcel and final map subdivisions, as defined by the Subdivision Map Act.

b. Construction of any structure for human occupancy.

c. Alterations or additions to structures for human occupancy the value of which exceeds fifty percent (50%) of the value of the existing structure.

d. Any change in use or character of occupancy that results in the conversion of a building or structure from one not used for human occupancy to one that is so used.

6. Exemption From Fault Evaluation Report Requirement

Notwithstanding the FER requirements, the following types of development are exempt from the requirement of a Geologic Fault Evaluation Report:

a. Construction, alteration, or additions of three (3) or fewer single-family wood-frame dwellings or mobile homes, provided that they do not exceed two (2) stories;

b. Construction, alteration, or additions of four (4) or more wood-frame, single-family homes or mobile homes, provided that they do not exceed two (2) stories and if the dwelling is located within a subdivision as defined in the Subdivision Map Act, for which a FER has been approved or waived.

c. Conversion of an existing apartment complex into a condominium.

7. Content of Geologic Fault Evaluation Report

The required report shall be based on a geologic investigation designed to identify the location, recency, and nature of faulting that may have affected the project site in the past and may affect the project site in the future. The report may be combined with other geological or geotechnical reports. The report shall be prepared in accordance with the CDMG Note #49 "Guidelines for Evaluating the Hazard of Surface Fault Rupture." CDMG Notes #37, #43, and #44 shall be utilized as applicable when the FER required herein is combined with other geological or geotechnical reports. CDMG Special Publication 42 should be reviewed prior to the FER investigation.

8. Waiver of Required Report

Waiver from the FER required herein may be applied for pursuant to the procedure outlined in Appendix D, "Waiver Procedure for the Alquist-Priolo Act," contained in Special Publication 42 "Fault-Rupture Hazard Zones in California," California Division of Mines and Geology, 1985. Granting of such a waiver is subject to the approval of the State Geologist. A waiver would probably not be granted unless the geologic conditions in the immediate vicinity of the project are well established by previous site-specific geologic studies that meet appropriate FER investigations.

9. Required Findings

The Hearing Officer may approve a Special Permit for development located within an Alquist-Priolo Special Studies Zone if all of the applicable Public Safety Impact Findings are made.

10. Review of Geologic Fault Evaluation Report by City Geologist

An application for development which requires a FER or waiver prepared pursuant to the Alquist-Priolo Fault Hazard Regulations shall not be accepted as complete unless and until there are:

a. A fully executed agreement between a geologist registered in the State of California and the City to either review the FER required hereinabove or to prepare a request for waiver.

b. A fully executed agreement between the City and the applicant to reimburse the City for the costs incurred pursuant to the agreement specified in subparagraph 1. above.

Within thirty (30) days of an application for development located within an Alquist-Priolo special study area, the City shall cause a geologist registered in the State of California (hereinafter called City reviewing geologist) to review the FER. The review shall assess the adequacy of the documentation contained in the report, and the appropriateness of the depth of study conducted in consideration of the use proposed for the project site. The City reviewing geologist shall prepare a written review which either concurs or does not concur with the scope, methodology, interpretations, conclusions, and recommendations of the FER. Said review shall be subject to comment and appropriate revision by the City in consultation with the City reviewing geologist.

Within thirty (30) days after acceptance of the FER, the City shall forward it to the State Geologist to be placed on open file.

11. Amendments to the Alquist-Priolo Special Studies Zone Boundaries

After the conclusion of a state mandated Fault Evaluation Report, the size of the Special Studies Zone may be affected by the results of the FER or the cumulative results of a number of FERs. If it is proven that no active fault exists in the area covered by the FERs, then consideration should be made to remove the subject area from the Alquist-Priolo Special Studies Zone. Conversely, if a fault or faults are found on the parcel, especially if near the boundary of or outside of an Alquist-Priolo Special Studies Zone, then it would be appropriate to widen the zone or establish a new zone. To officially change the boundaries of a Special Studies Zone, a request must be submitted to the State Geologist. In an unofficial capacity, the City should maintain a program of updating its data base on Special Studies Zones as Fault Evaluation Reports become available.

C. Appendix C - California Division of Mines and Geology Report Guidelines

- CDMG Note 37 - Guidelines to Geologic/Seismic Reports
- CDMG Note 43 - Recommended Guidelines for Determining the Maximum Credible and the Maximum Probable Earthquakes
- CDMG Note 44 - Recommended Guidelines for Preparing Engineering Geologic Reports
- CDMG Note 46 - Guidelines for Geologic/Seismic Considerations in Environmental Impact Reports
- CDMG Note 49 - Guidelines for Evaluating the Hazard of Surface Fault Rupture



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CDMG NOTES

NUMBER 37

GUIDELINES TO GEOLOGIC/SEISMIC REPORTS

The following guidelines are taken from "Geology and earthquake hazards: Planners guide to the seismic safety element" prepared by Grading Codes Advisory Board and Building Code Committee of the Southern California Section, Association of Engineering Geologists, July, 1973. They are reprinted here courtesy of the Association of Engineering Geologists.

I. Introduction

This is a suggested guide or format for the seismic section of engineering geologic reports. These reports may be prepared for projects ranging in size from a single lot to a master plan for large acreage, in scope from a single family residence to large engineered structures, and from sites located on an active fault to sites a substantial distance from the nearest known active fault. Because of this wide variation, the order, format, and scope should be flexible and tailored to the seismic and geologic conditions, and intended land use. The following suggested format is intended to be relatively complete, and not all items would be applicable to small projects or low risk sites. In addition, some items would be covered in separate reports by soil engineers, seismologists, or structural engineers.

II. The Investigation

A. Regional Review

A review of the seismic or earthquake history of the region should establish the relationship of the site to known faults and epicenters. This would be based primarily on review of existing maps and technical literature and would include:

1. Major earthquakes during historic time and epicenter locations and magnitudes, near the site.
2. Location of any major or regional fault traces affecting the site being investigated, and a discussion of the tectonic mechanics and other relationships of significance to the proposed construction.

B. Site Investigation

A review of the geologic conditions at or near the site that might indicate recent fault or seismic activity. The degree of detail of the study should be com-

patible with the type of development and geologic complexity. The investigation should include the following:

1. Location and chronology of local faults and the amount and type of displacement estimated from historic records and stratigraphic relationships. Features normally related to activity such as sag ponds, alignment of springs, offset bedding, disrupted drainage systems, offset ridges, faceted spurs, dissected alluvial fans, scarps, alignment of landslides, and vegetation patterns, to name a few, should be shown on the geologic map and discussed in the report.
2. Locations and chronology of other earthquake induced features caused by lurching, settlement, liquefaction, etc. Evidence of these features should be accompanied with the following:
 - a. Map showing location relative to proposed construction.
 - b. Description of the features as to length, width and depth of disturbed zone.
 - c. Estimation of the amount of disturbance relative to bedrock and surficial materials.
3. Distribution, depth, thickness and nature of the various unconsolidated earth materials, including ground water, which may affect the seismic response and damage potential at the site should be adequately described.

C. Methods of Site Investigation

1. Surface investigation
 - a. Geologic mapping.
 - b. Study of aerial photographs.
 - c. Review of local ground water data such as water level fluctuation, ground water barriers or anomalies indicating possible faults.
2. Subsurface investigation
 - a. Trenching across any known active faults and suspicious zones to determine location and recency of movement, width of disturbance, physical condition of fault zone materials, type of displacement, and geometry.

(over)

b. Exploratory borings to determine depth of unconsolidated materials and ground water, and to verify fault-plane geometry. In conjunction with the soil engineering studies, obtain samples of soil and bedrock material for laboratory testing.

c. Geophysical surveys which may indicate types of materials and their physical properties, ground water conditions, and fault displacements.

III. *Conclusions and Recommendations*

At the completion of the data accumulating phase of the study, all of the pertinent information is utilized in forming conclusions of potential hazard relative to the intended land use or development. Many of these conclusions will be revealed in conjunction with the soil engineering study.

A. *Surface Rupture Along Faults*

1. Age, type of surface displacement, and amount of reasonable anticipated future displacements of any faults within or immediately adjacent to the site.

2. Definition of any areas of high risk.

3. Recommended building restrictions or use-limitations within any designated high risk area.

B. *Secondary Ground Effects*

1. Estimated magnitude and distance of all relevant earthquakes.

2. Lurching and shallow ground rupture.

3. Liquefaction of sediments and soils.

4. Settlement of soils.

5. Potential for earthquake induced landslide.

IV. *Presentation of Data*

Visual aids are desirable in depicting the data and may include:

A. *General data*

1. Geologic map of regional and/or local faults.

2. Map(s) of earthquake epicenters.

3. Fault strain and/or creep map.

B. *Local or site data*

1. Geologic map.

2. Geologic cross-sections illustrating displacement and/or rupture.

3. Local fault pattern and mechanics relative to existing and proposed ground surface.

4. Geophysical survey data.

5. Logs of exploratory trenches and borings.

V. *Other Essential Data*

A. *Sources of data*

1. Reference material listed in bibliography.

2. Maps and other source data referenced.

3. Compiled data, maps, plates included or referenced.

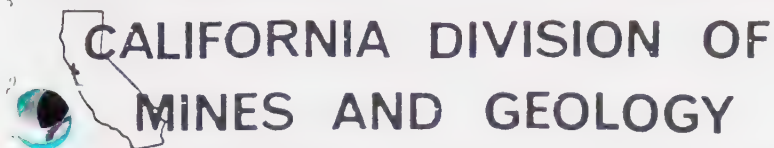
B. *Vital support data*

1. Maximum credible earthquake.

2. Maximum probable earthquake.

3. Maximum expected bedrock acceleration.

C. *Signature and license number of geologist registered in California*



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CDMG NOTE

NUMBER 43

RECOMMENDED GUIDELINES FOR DETERMINING THE MAXIMUM CREDIBLE AND THE MAXIMUM PROBABLE EARTHQUAKES

The following guidelines were suggested by the Geotechnical Subcommittee of the State Building Safety Board on 3 February 1975 to assist those involved in the preparation of geologic/seismic reports as required by regulations of the California Administrative Code, Title 17, Chapter 8, Safety of Construction of Hospitals. CDMG is currently using these guidelines when reviewing geologic/seismic reports.

Maximum credible earthquake

The maximum credible earthquake is the maximum earthquake that appears capable of occurring under the presently known tectonic framework. It is a rational and believable event that is in accord with all known geologic and seismologic facts. In determining the maximum credible earthquake, little regard is given to its probability of occurrence, except that its likelihood of occurring is great enough to be of concern. It is conceivable that the maximum credible earthquake might be approached more frequently in one geologic environment than in another.

The following should be considered when deriving the maximum credible earthquake:

- (a) The seismic history of the vicinity and the geologic province;
- (b) the length of the significant fault or faults which can affect the site within a radius of 100 kilometers; (See CDMG Preliminary Report 13);

- (c) the type(s) of faults involved;
- (d) the tectonic and/or structural history;
- (e) the tectonic and/or structural pattern or regional setting (geologic framework);
- (f) the time factor shall not be a parameter.

Maximum probable earthquake (functional-basis earthquake)

The maximum probable earthquake is the maximum earthquake that is likely to occur during a 100-year interval. It is to be regarded as a probable occurrence, not as an assured event that will occur at a specific time.

The following should be considered when deriving the "functional-basis earthquake":

- (a) The regional seismicity, considering the known past seismic activity;
- (b) the fault or faults within a 100 kilometer radius that may be active within the next 100 years;
- (c) the types of faults considered;
- (d) the seismic recurrence factor for the area and faults (when known) within the 100 kilometer radius;
- (e) the mathematic probability or statistical analysis of seismic activity associated with the faults within the 100 kilometer radius (the recurrence information should be plotted graphically);
- (f) the postulated magnitude shall not be lower than the maximum that has occurred within historic time.

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CALIFORNIA DIVISION OF MINES AND GEOLOGY

DIVISION HEADQUARTERS
RESOURCES BUILDING
ROOM 1341
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CDMG NOTE

NUMBER 44

RECOMMENDED GUIDELINES FOR PREPARING ENGINEERING GEOLOGIC REPORTS

The following guidelines are required for engineering geologic reports submitted to the Department of Public Works, County of Ventura. This information was originally printed in *California Geology*, November 1974. These guidelines are an example of "State-of-the-Art", and all the elements should be considered during the preparation and review of geologic reports. Item V was provided by the Southern California Section, Association of Engineering Geologists; the State Building Safety Board; and the California Division of Mines and Geology.

I. GEOLOGIC MAPPING

A. Each report must be a product of independent geologic mapping of the subject area at an appropriate scale and in sufficient detail to yield a maximum return of pertinent data. In connection with this objective, it may be necessary for the geologist to extend his mapping into adjacent areas.

B. All mapping should be done on a base with satisfactory horizontal and vertical control—in general a detailed topographic map. The nature and source of the base map should be specifically indicated. For sub-divisions, the base map should be the same as that to be used for the tentative map or grading plan.

C. Mapping by the geologist should reflect careful attention to the lithology, structural elements, and three-dimensional distribution of the earth materials exposed or inferred within the area. In most hillside areas these materials will include both bedrock and surficial deposits. A clear distinction should be made between observed and inferred features and relationships.

D. A detailed large-scale map normally will be required for a report on a tract, as well as for a report on a smaller area in which the geologic relationships are not simple.

E. Where three-dimensional relationships are significant but cannot be described satisfactorily in words alone, the report should be accompanied by one or more appropriately positioned structure sections.

F. The locations of test holes and other specific sources of subsurface information should be indicated in the text of the report or, better, on the map and any sections that are submitted with the report.

II. GENERAL INFORMATION

Each report should include definite statements concerning the following matters:

A. Location and size of subject area, and its general setting with respect to major geographic and geologic features.

B. Who did the geologic mapping upon which the report is based, and when the mapping was done.

C. Any other kinds of investigations made by the geologist and, where pertinent, reasons for doing such work.

D. Topography and drainage in the subject area.

E. Abundance, distribution, and general nature of exposures of earth materials within the area.

F. Nature and source of available subsurface information. Suitable explanations should provide any technical reviewer with the means for assessing the probable reliability of such data. (Subsurface relationships can be variously determined or inferred, for example, by projection of surface features from adjacent areas, by the use of test-hole logs, and by interpretation of geophysical data, and it is evident that different sources of such information can differ markedly from one another in degree of detail and reliability according to the method used).

III. GEOLOGIC DESCRIPTIONS

The report should contain brief but complete descriptions of all natural materials and structural features recognized or inferred within the subject area. Where interpretations are added to the recording of direct observations, the bases for such interpretations should be clearly stated.

The following check list may be useful as a general, though not necessarily complete, guide for descriptions:

A. Bedrock—igneous, sedimentary, metamorphic types.

1. Identification as to rock type (e.g., granite, silty sandstone, mica schist).
2. Relative age, and, where possible, correlation with named formations (e.g., Rincon formation, Vaqueros sandstone).
3. Distribution.
4. Dimension features (e.g.; thickness, outcrop breadth, vertical extent).
5. Physical characteristics (e.g.; color, grain size, nature of stratification, foliation, or schistosity, hardness, coherence).

6. Special physical or chemical features (e.g.; calcareous or siliceous cement, concretions, mineral deposits, alteration other than weathering).

7. Distribution and extent of weather zones; significant differences between fresh and weathered rock.

8. Response to natural surface and near-surface processes (e.g.; raveling, gullying, mass movement).

B. Structural features—stratification, foliation, schistosity, folds, zones of contortion or crushing, joints, shear zones, faults, etc.

1. Occurrence and distribution.
2. Dimensional characteristics.
3. Orientation, and shifts in orientation.
4. Relative ages (where pertinent).
5. Special effects upon the bedrock. (Describe the conditions of planar surfaces).
6. Specific features of faults (e.g.; zones of gouge and breccia, nature of offsets, timing of movements); are faults active in either the geological sense or the historical sense?

C. Surficial (unconsolidated) deposits—artificial (manmade) fill, topsoil, stream-laid alluvium, beach sands and gravels, residual debris, lake and pond sediments, swamp accumulations, dune sands, marine and nonmarine terrace deposits, talus accumulations, creep and slopewash materials, various kinds of slump and slide debris, etc.

1. Distribution, occurrence, and relative age; relationships with present topography.
2. Identification of materials as to general type.
3. Dimensional characteristics (e.g.; thickness, variations in thickness, shape).
4. Surface expression and correlation with features such as terraces, dunes, undrained depressions, anomalous protuberances.
5. Physical or chemical features (e.g.; moisture content, mineral deposits, content of expansive clay minerals, alteration, cracks and fissures, fractures).

(over)

GUIDELINES FOR GEOLOGIC/SEISMIC CONSIDERATIONS IN ENVIRONMENTAL IMPACT REPORTS

The following guidelines were prepared by the Division of Mines and Geology with the cooperation of the State Water Resources Control Board to assist those who prepare and review environmental impact reports.

These guidelines will expedite the environmental review process by identifying the potential geologic problems and by providing a recognition of data needed for design analysis and mitigating measures. All statements should be documented by reference to material (including specific page and chart numbers) available to the public. Other statements should be considered as opinions and so stated.

1. CHECKLIST OF GEOLOGIC PROBLEMS FOR ENVIRONMENTAL IMPACT REPORTS

GEOLOGIC PROBLEMS		Could the project or geologic event cause environmental problems?			Is this conclusion documented in attached reports?	
PROBLEM	ACTIVITY CAUSING PROBLEM	NO	YES	ENVIRONMENTAL PROBLEMS	NO	YES
EARTHQUAKE DAMAGE	Fault Movement					
	Liquefaction					
	Landslides					
	Differential Compaction/ Seismic Settlement					
	Ground Rupture					
	Ground Shaking					
	Tsunami					
	Seiches					
	Flooding Due to Failure of Dams and Levees					
LOSS OF MINERAL RESOURCES	Loss of Access					
	Deposits Covered by Changed Land-Use Conditions					
	Zoning Restrictions					
WASTE DISPOSAL PROBLEMS	Change in Groundwater Level					
	Disposal of Excavated Material					
	Percolation of Waste Material					
SLOPE AND/OR FOUNDATION INSTABILITY	Landslides and Mudflows					
	Unstable Cut and Fill Slopes					
	Collapseable and Expansive Soil					
	Trench-Well Stability					
EROSION, SEDIMENTATION, FLOODING	Erosion of Graded Areas					
	Alteration of Runoff					
	Unprotected Drainage Ways					
	Increased Impervious Surfaces					
LAND SUBSIDENCE	Extraction of Groundwater, Gas, Oil, Geothermal Energy					
	Hydrocompaction, Peat Oxidation					
VOLCANIC HAZARDS	Lava Flow					
	Ash Fall					

(over)

6. Physical characteristics (e.g.: color, grain size, hardness, compactness, coherence, cementation).

7. Distribution and extent of weathered zones; significant differences between fresh and weathered material.

8. Response to natural surface and near-surface processes (e.g.: raveling, gullying, subsidence, creep, slope-washing, slumping and sliding).

D. Drainage—surface water and groundwater.

1. Distribution and occurrence (e.g.: streams, ponds, swamps, springs, seeps, subsurface basins).

2. Relations to topography.

3. Relations to geologic features (e.g.: previous strata, fractures, faults).

4. Sources and permanence.

5. Variations in amounts of water (e.g.: intermittent springs and seeps, floods).

6. Evidence for earlier occurrence of water at localities now dry (e.g.: vegetation, mineral deposits, historic records).

7. The effect of water on the properties of the in-place materials.

E. Features of special significance (if not already included in foregoing descriptions).

1. Features representing accelerated erosion (e.g.: cliff reentrants, badlands, advancing gully heads).

2. Features indicating subsidence of settlement (e.g.: fissures, scarplets, offset reference features, historic records and measurements).

3. Features indicating creep (e.g.: fissures, scarplets, distinctive patterns of cracks and/or vegetation, topographic bulges, displaced or tilted reference features, historic records and measurements).

4. Slump and slide masses in bedrock and/or surficial deposits; distribution, geometric characteristics, correlation with topographic and geologic features, age and rates of movement.

5. Deposits related to recent floods (e.g.: talus aprons, debris ridges, canyon-bottom trash).

6. Active faults and their recent effects upon topography and drainage.

IV. THE BEARING OF GEOLOGIC FACTORS UPON THE INTENDED LAND USE

Treatment of this general topic, whether presented as a separate section or integrated in some manner with the geologic descriptions, normally constitutes the principal contribution of the report. It involves both (1) the effects of geologic features upon the proposed grading, construction, and land use, and (2) the effects of these proposed modifications upon future geological processes in the area.

The following check list includes the topics that ordinarily should be considered in submitting discussion, conclusions, and recommendations in the geologic reports:

A. General compatibility of natural features with proposed land use: Is it basically reasonable to develop the subject area?

1. Topography.

2. Lateral stability of earth materials.

3. Problems of flood inundation, erosion, and deposition.

4. Problems caused by features or conditions in adjacent properties.

5. Other general problems.

B. Proposed cuts.

1. Prediction of what materials and structural features will be encountered.

2. Prediction of stability based on geologic factors.

3. Problems of excavation (e.g.: unusually hard or massive rock, excessive flow of groundwater).

4. Recommendations for reorientation or repositioning of cuts, reduction of cut slopes, development of compound cut slopes, special stripping above daylight lines, buttressing, protection against erosion, handling of seepage water, setbacks for structures above cuts, etc.

C. Proposed masses of fill.

1. General evaluation of planning with respect to canyon-filling and sidehill masses of fill.

2. Comment on suitability of existing natural materials for fill.

3. Recommendations for positioning of fill masses, provision for underdrainage, buttressing, special protection against erosion.

D. Recommendations for subsurface testing and exploration.

1. Cuts and test holes needed for additional geologic information.

2. Program of subsurface exploration and testing, based upon geologic considerations, that is most likely to provide data needed by the soils engineer.

E. Special recommendations:

1. Areas to be left as natural ground.

2. Removal or buttressing of existing slide masses.

3. Flood protection.

4. Protection from wave erosion along shorelines.

5. Problems of groundwater circulation.

6. Position of structures with respect to active faults.

V. SEISMIC CONSIDERATIONS

The following published guidelines should be considered when preparing seismic information.

1. CDMG Note No. 37, "Guidelines to Geologic/Seismic Reports".

2. CDMG Note No. 43, "Recommended Guidelines for Determining the Maximum Credible and the Maximum Probable Earthquakes".

VI. DOCUMENTATION AND IMPLEMENTATION

A. The report should consider as the minimum requirement, Chapter 70, Uniform Building Code (1973). Refer to California Administration Code, Title 25, Section 1090, Excavation and Grading.

B. All material in the report should be relevant to the purpose of the report.

C. All statements should be documented by references or by accurate field observations.

D. Aerial photos (originals or suitable copies) should be included to document any discussion on landslides and faults.

E. The method(s) of field analysis should be discussed in a lucid manner.

II. CHECKLIST OF GEOLOGIC REPORT ELEMENTS

REPORT ELEMENTS	YES	NO
A. General Elements Present Description and map of project. Description and map of site. Description and map of pertinent off-site areas.		
B. Geologic Element (refer to checklist) Are all the geologic problems mentioned? Are all the geologic problems adequately described?		
C. Mitigating Measures Are mitigating measures necessary? Is sufficient geologic information provided for the proper design of mitigating measures? Will the failure of mitigating measures cause an irreversible environmental impact?		
D. Alternatives Are alternatives necessary to reduce or prevent the irreversible environmental impact mentioned? Is sufficient geologic information provided for the proper consideration of alternatives? Are all the possible alternatives adequately described?		
E. Implementation of the Project Is the geologic report signed by a registered geologist? Does the report provide the necessary regulations and performance criteria to implement the project?		

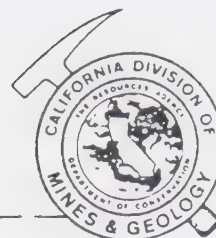
*Required for interpretive geologic information.

III. PUBLISHED REFERENCES (selected)

A. California Division of Mines and Geology Publications		
1. Alfors, J.T., et al., 1973. Urban geology master plan for California: Bulletin 198.	7. Note No. 44. Recommended guidelines for preparing engineering geologic reports. 1975.	2. Bolt, B.A. and Miller, R.D., 1971. Seismicity of northern and central California, 1965-1969: Bulletin of the Seismological Society of America, v. 61, no. 6.
2. Greensfelder, R.W., 1974. Maximum credible rock acceleration from earthquakes in California: Map Sheet 23.	8. Note No. 45. Recommended guidelines for preparing mine reclamation plans. 1975.	3. California Department of Water Resources. 1964. Crustal strain and fault movement investigation: Bulletin No. 116-2.
3. Jennings, C.W., 1975. Fault Report 13 of California. GDM No. 1.	9. Parke, D.L., Reel, C.R., Topozada, T.R., 1978. Earthquake Epicenter Map of California, showing events from 1900 through 1974.	4. Coffman, J.L. and von Hake, C.A., ed., 1973. Earthquake history of the United States: U.S. Department of Commerce, Publication 41-1.
4. Oakeshott, G.B., 1974. San Fernando, California, earthquake of 9 February 1971: Bulletin 196.	10. Reel, C.R., Topozada, T.R., and Parke, D.L., 1978. Earthquake catalog of California, January 1, 1900-December 31, 1974 (microfiche).	5. Hileman, J.A., et al., 1973. Seismicity of the southern California region, 1 January 1932 to 31 December 1972: California Institute of Technology, Contribution 2385. Periodical updates to this are available.
5. Note No. 37. Guidelines to geologic/seismic reports. 1973.	B. Other Publications	
6. Note No. 43. Recommended guidelines for determining the maximum credible and the maximum probable earthquakes. 1975.		
	1. Allen, C.R., et al., 1965. Relationship between seismicity and geologic structure in the southern California region: Bulletin of the Seismological Society of America, v. 55, no. 4.	

IV. PUBLIC AGENCIES WITH GEOLOGIC DATA

Source	Data Available			
	Seismicity	Geology	Ground Water	Soils
Libraries and Geology and Engineering Departments of California Universities	X	X	X	X
California Institute of Technology	X			
California Division of Mines and Geology (Sacramento, San Francisco, Los Angeles, CA)	X	X		
California Department of Water Resources (Sacramento, CA)		X		X
California Department of Transportation (District Offices)				X
County Soil & Water Conservation Districts				X
County Engineer and Departments of Building and Safety	X	X		X
County Highway Department				X
County Flood Control District				X
U.S. Geological Survey (Menlo Park, CA)		X		
U.S. Corps of Engineers (District Engineer)		X		
U.S. Bureau of Reclamation (Regional Offices)		X		
U.S. Soil Conservation Service and Forest Service				X



GUIDELINES FOR EVALUATING THE HAZARD OF SURFACE FAULT RUPTURE

These guidelines are to assist geologists who investigate faults relative to the hazard of primary surface rupture. Subsequent to the passage of the Alquist-Priolo Special Studies Zones Act (1972), it has become apparent that fault investigations conducted in California are frequently incomplete or otherwise inadequate for the purpose of evaluating the potential of surface fault rupture. It is further apparent that statewide standards for investigating faults do not exist.

The investigation of sites for the possible hazard of surface fault rupture is a deceptively difficult geologic task. Many active faults are complex, consisting of multiple breaks. Yet the evidence for identifying active fault traces is generally subtle or obscure and the distinction between recently active and long-inactive faults may be difficult to make. Once a structure is sited astride an active fault, the resulting fault-rupture hazard cannot be mitigated unless the structure is relocated, whereas when a structure is placed on a landslide, the hazard from landsliding often can be mitigated. Further, it is impractical from an economic, engineering, and architectural point of view to design a structure to withstand serious damage under the stress of surface fault rupture. Thus, the evaluation of a site for the hazard of surface fault rupture is a difficult and delicate procedure.

Because of the complexity of evaluating surface and near surface faults and because of the infinite variety of site conditions, no single investigative method will be the best, or even useful, at all sites. Nonetheless, certain investigative methods are more helpful than others in locating faults and evaluating the recency of activity.

The evaluation of a given site with regard to the potential hazard of surface fault rupture is based extensively on the concepts of *recency* and *recurrence* of faulting along existing faults. In a general way, the more recent the faulting the greater the probability for future faulting (Allen, 1975). Stated another way, faults of known historic activity during the last 200 years, as a class, have a greater probability for future activity than faults classified as Holocene age (last 11,000 years) and a much greater probability of future activity than faults classified as Quaternary age (last two million years). However, it should be kept in mind that certain faults have recurrent activity measured in tens or hundreds of years, whereas other faults may be inactive for thousands of years before being reactivated. Other faults may be characterized by creep-type rupture. The magnitude, sense, and nature of fault rupture also vary for different faults or even along different segments of the same fault. Even so, future faulting generally is expected to recur along pre-existing faults (Bonilla, 1970, p. 68). The development of a new fault or reactivation of a long-inactive fault is relatively uncommon and generally need not be a concern in site development.

As a practical matter, fault investigations should be directed at the problem of locating existing faults and then attempting to evaluate the recency of their activity. It is pointed out that data are obtained both from the site and outside the site area. The most direct method of evaluating recency is to observe (in a trench or road cut) the youngest geologic unit faulted and the oldest unit that is not faulted. Recently active faults may also be identified by direct observation of young, fault-related geomorphic (i.e. topographic) features in the field, on aerial photographs, or on remotely obtained images. Other indirect and more interpretive methods are identified in the outline below. Some of these methods are discussed in Slemmons (1977), Bonilla (1982), Wallace (1977), Taylor and Cluff (1973), Sherard and others (1974), and Hatheway and Leighton (1979), but no comprehensive manual on the subject of fault investigation and evaluation exists at this time. Many other useful references exist and are listed in the bibliographies of the references cited here.

The following annotated outline provides guidelines for a comprehensive fault investigation that may be applied to any project site, large or small. Fault investigations may be conducted in conjunction with other geotechnical investigations (see CDMG Notes 37 and 44). Although not all investigative techniques need to be or can be employed in evaluating a given site, the outline provides a checklist for preparing complete and well-documented reports. Since most reports on fault investigations are filed with and reviewed by local or state government agencies, it is necessary that the reports be adequately documented and carefully written to facilitate that review. The importance of the review process is emphasized here, because it is the reviewer who must evaluate the adequacy of reports, interpret or set standards where they are unclear, and advise the governing agency as to their acceptability (Hart and Williams, 1978).

The scope of the investigation is dependent not only on complexity and economics of a project, but also on the level of risk acceptable for the proposed structure or development (Joint Committee on Seismic Safety, 1974, p. 9). Obviously, a more detailed investigation should be made for hospitals, high-rise buildings, and other critical or sensitive structures than for low-density structures such as wood frame dwellings that are comparatively safe. The conclusions drawn from any given set of data, however, must be consistent and unbiased. Recommendations must be clearly separated from conclusions, since recommendations are not totally dependent on geologic factors. The final decisions as to whether, or how, a given project should be developed lies in the hands of the owner and the governing body that must review and approve the project.

Suggested Outline for Geologic Reports on Faults

The following subjects should be addressed, or at least considered, in any geologic report on faults. Some of the investigative methods listed below should be carried out well beyond the site being investigated. However, it is not expected that all of the methods identified would be used in a single investigation.

I. Text

- A. Purpose and scope of investigation
- B. Geologic setting
- C. Site description and conditions. Include information on geologic units, graded and filled areas, vegetation, existing structures, and other factors that may affect the choice of investigative methods and the interpretation of data.
- D. Methods of investigation
 1. Review of published and unpublished literature and records concerning geologic units, faults, ground-water barriers, and other factors.
 2. Stereoscopic interpretation of aerial photographs and other remotely sensed images to detect fault-related topography, vegetation and soil contrasts, and other lineaments of possible fault origin.
 3. Surface observations, including mapping of geologic and soil units and structures, geomorphic features, springs, deformation of man-made structures due to fault creep, both on and beyond the site.

4. Subsurface investigations
 - a. Trenching and other extensive excavations to permit detailed and direct observation of continuously exposed geologic units and features that must be carefully logged (see Taylor and Cluff, 1973).
 - b. Borings and test pits to permit collection of data on geologic units and ground water at specific locations. Data points must be sufficient in number and adequately spaced to permit valid correlations and interpretations.
5. Geophysical investigations. These are indirect methods that require a knowledge of specific geologic conditions for reliable interpretations. They should seldom, if ever, be employed alone without knowledge of the geology. Geophysical methods alone *never* prove the absence of a fault nor do they identify the recency of activity. The types of equipment and techniques used should be described.
 - a. Seismic refraction
 - b. Magnetic intensity
 - c. Other (electrical resistivity)
6. Other methods should be included when special conditions permit, or requirements for critical structures demand, a more intensive investigation.
 - a. Aerial reconnaissance overflights.
 - b. Geodetic and strain measurements, microseismicity monitoring, or other monitoring techniques.
 - c. Radiometric analysis (C^{14} , K-Ar), stratigraphic correlation (fossils, mineralogy), soil profile development, paleomagnetism (magnetostratigraphy), or other age-dating techniques to identify the age of faulted or unfaulted units or surfaces.

E. Conclusions

1. Location and existence (or absence) of hazardous faults on or adjacent to the site.
2. Type of faults and nature of anticipated offset: Direction of relative displacement, and maximum displacement that is possible.
3. Probability of or relative potential for future surface displacement. The likelihood of future ground rupture seldom can be stated mathematically, but may be stated in semiquantitative terms such as low, moderate, or high, or interns of slip rates determined for specific fault segments.
4. Degree of confidence in and limitations of data and conclusions.

F. Recommendations

1. Set-back distances from hazardous faults, if appropriate. State and local law may dictate minimum standards (see Hart, 1980, appendix B).
2. Need for additional studies.
3. Risk evaluations relative to the proposed development—opinions are acceptable. But remember that the ultimate decision as to whether the risk is acceptable lies with the governing body.

II. References

- A. Literature and records cited or reviewed; citations should be complete.
- B. Aerial photographs or images interpreted—list type, date, scale, source, and index numbers.
- C. Other sources of information, including well records, personal communications, and other data sources.

III. Illustrations—these are essential to the understanding of the report and to reduce the length of text.

- A. Location map—identify site locality, significant faults, geographic feature, regional geology, seismic epicenters, and other pertinent data; 1:24,000 scale is recommended.
- B. Site development map—show site boundaries, existing and proposed structures, graded areas, streets, exploratory

trenches, borings, geophysical traverses, and other data; recommended scale is 1 inch equals 200 feet, or larger.

- C. Geologic map—shows distribution of geologic units (if more than one), faults and other structures, geomorphic features, aerial photo lineaments, and springs; on topographic map 1:24,000 scale or larger; can be combined with III (A) or III (B).
- D. Geologic cross-sections, if needed to provide 3-dimensional picture.
- E. Logs of exploratory trenches, and borings—show details of observed features and conditions; should not be generalized or diagrammatic. Trench logs should show topography and geologic structure at a 1:1 horizontal to vertical scale.
- F. Geophysical data and geologic interpretations.

IV. Appendix: Supporting data not included above (e.g. water well data).

V. Authentication: Signature and registration number of investigating geologist.

Selected References

- Allen, C.R., 1975. Geologic criteria for evaluating seismicity: Geological Society of America Bulletin, v. 86, p. 1041-1057.
- Bonilla, M.G., 1970. Surface faulting and related effects in Wiegel, R.L., editor, *Earthquake Engineering*, Prentice-Hall, Inc., Englewood Cliffs, N.J., p. 47-74. (Contains an extensive bibliography on surface faulting, fault patterns and types, width of fault zones, and creep).
- Bonilla, M.G., 1982. Evaluation of potential surface faulting and other tectonic deformation: U.S. Geological Survey Open-File Report 82-732, 58 p.
- California Division of Mines and Geology, 1973. Guidelines to geologic and seismic reports: CDMG NOTE 37.
- California Division of Mines and Geology, 1975. Recommended guidelines for preparing engineering geologic reports. CDMG NOTE 44.
- Hart, E.W., 1980. Fault-rupture hazard zones in California: California Division of Mines and Geology Special Publication 42, 25 p. (revised periodically; information on state law and zoning program for regulating development near hazardous faults).
- Hart, E.W., and Williams, J.W., 1978. Geologic review process: CALIFORNIA GEOLOGY, v. 31, no. 10, p. 235-236.
- Hatheway, A.W., and Leighton, F.B., 1979. Trenching as an exploratory tool in A.W. Hatheway and C.R. McClure, Jr., editors, *Geology in the siting of nuclear power plants: Geological Society of America Reviews in Engineering Geology*, v. IV, p. 169-195.
- Joint Committee on Seismic Safety, California Legislature, 1974. Meeting the earthquake challenge: California Division of Mines and Geology, Special Publication 45, 223 p.
- Sherard, J.L., Cluff, L.S., and Allen, C.R., 1974. Potentially active faults in dam foundations: *Geotechnique*, Institute of Civil Engineers, London, v. 24, no. 3, p. 367-428.
- Stemmons, D.B., 1977. State-of-the-art for assessing earthquake hazards in the United States: Report 6, faults and earthquake magnitude: U.S. Army Engineer Waterways Experiment Station Miscellaneous Paper S-73-1, 129 p. with 37 p. appendix. (Summarizes fault evaluation techniques; extensive bibliography).
- Taylor, C.L., and Cluff, L.S., 1973. Fault activity and its significance assessed by exploratory excavation in *Proceedings of the Conference on Tectonic Problems of the San Andreas Fault System*: Stanford University Publication, Geological Sciences, v. XIII, September 1973, p. 239-247.
- Wallace, R.E., 1977. Profiles and ages of young fault scarps, north-central Nevada: Geological Society of America Bulletin, v. 88, p. 1267-1281.

EHW, rev. 9/83

**** IV. ECONOMIC ENVIRONMENT ****

This Chapter of the General Plan addresses the economic environment of the community and attempts to reorganize some of the commercial and industrial development in Arcata according to functional and amenity criteria. It lists policies which should guide decisions regarding commercial and industrial development, discusses how these policies are reflected on the General Plan Map and suggests actions designed to implement the General Plan.

Together with its commercial and industrial development, Arcata's economic environment also includes Humboldt State University. As the City's largest employer, the University directly and indirectly influences Arcata's economic climate. It is assumed that the City and the University will continue to work together as coequal partners toward the common objective of improving the economic health of the Planning Area. The Arcata Economic Development Corporation will assist the City in economic development activities, as will the newly established Redevelopment Agency.

The primary thrust of economic development activities by the City will be to encourage the continued startup and growth of small businesses which will diversify the present economic base of the area. Smaller manufacturing companies serving a specialized market outside of Humboldt County should be recognized as the kind of company which can be successful and can provide new jobs and income to offset declines in the lumber industry. Tourism will also play a significant role in Arcata's economy.

**** POLICIES ****

**** INDUSTRIAL ****

- ** 1 **** Selected new industry which will provide employment for local area residents and reduce the cyclical unemployment effects of the lumber industry should be encouraged to locate in the Arcata area.
- ** 2 **** The City should encourage the private sector to provide an adequate amount of small industrial incubator space as well as industrial parcels to

allow for the development of new manufacturing businesses. The Aldergrove Industrial Park as well as private, vacant industrial lands should be marketed by the City to encourage manufacturing growth.

- ** 3 ** Successful existing manufacturing firms should be encouraged and assisted to expand employment and production.

** COMMERCIAL **

- ** 4 ** The development of appropriate commercial uses in dispersed areas should be permitted within residential neighborhoods, provided that the character and scale of such development does not disrupt the quality of the neighborhood's residential environment. These neighborhood commercial areas should provide convenient access and facilities for shoppers arriving on foot or bicycle.

- ** 5 ** The City should encourage the development of tourist-attracting projects which utilize the area's recreational, cultural and historical resources. As examples, the City should encourage the development of the Arcata Marsh and Wildlife Sanctuary, a quality Recreation Vehicle Park in the South G or I Street areas near the Sanctuary, expansion of the Pacific Arts Center and completion of the Community Park on Union Street and its use for events which will draw visitors to the community.

- ** 6 ** The City should streamline its development review process to the greatest degree possible by eliminating unnecessary Use Permit hearings and by delegating the approval authority for smaller projects such as minor subdivisions, sidewalk non-compliances and most commercial and industrial Use Permits to the Zoning Administrator.

- ** 7 ** The City's Sign Ordinance should encourage the principles of simplicity, harmony with surrounding architecture, safety, legibility, conservation of energy and materials, efficiency of communication and respect for surrounding properties' lines of sight.

Sign size competition should be avoided. Business signs should be for the purpose of identification rather than advertising.

- ** 8 **** Special attention should be given to the entrances to the City to ensure that landscaping, views, signs and the appearance of private property create a favorable image to visitors.

**** CBD ****

- ** 9 **** The Central Business District (CBD) should be defined as those blocks in the immediate vicinity of the Plaza, and positive action for its enhancement as the main activity center in Arcata should be encouraged. The City should support the development of the CBD as a pedestrian-oriented, mixed-retail, entertainment and services shopping area by encouraging a diversity of commercial uses there. In addition, it should encourage improvements which will create a more pleasant shopping environment and reduce circulation conflicts among automobiles, pedestrians and bicyclists.

- ** 10 **** The City should encourage restorative maintenance for the deteriorated buildings in the CBD and restrict the demolition of historically and/or architecturally significant buildings to accommodate new development. In addition, it should allow the conversion of structurally sound, attractive residential buildings in the CBD to commercial use while preserving the style, external visual appearance and character of the original structure. City review standards should recognize that the buildings in the downtown date from a variety of time periods reflecting many architectural styles. New development and renovations should be compatible with the existing character but should not be forced to follow any single style or time period. Good design regardless of style should be the primary concern.

**** GENERAL PLAN MAP ****

Major revisions are proposed in the General Plan Land Use Categories to provide a greater range of choice for businesses seeking locations. The revisions recognize changes in philosophy in the community as well as changes in development practices which have reduced the conflicts between different types of land use.

The **Industrial-Commercial** land use designation includes most areas which were previously shown as Heavy Commercial and some of the areas previously shown as Industrial. This designation is intended to provide attractive industrial areas suitable for light manufacturing and limited commercial uses. Heavy industrial uses which by necessity produce noise, odors, heavy truck traffic or dust would not be permitted in this designation. The Industrial-Commercial land use designation includes auto sales, service and repair, mobile home, truck and tractor sales, warehousing and wholesaling establishments, outdoor sales and storage lots, light industrial activities when conducted within a building and similar uses. Some retail sales uses and services will be allowed, particularly those involving sales predominantly to businesses or repair as an accessory use. The major areas of Industrial-Commercial use would be west of K Street, South G Street, one area near the 299/Giuntoli lane interchange and the Aldergrove Industrial Park.

The **Heavy-Industrial** land use designation indicates areas which are appropriate for heavy manufacturing, large-scale wood processing and storage, auto wrecking and junk yards and all other industrial operations. Some industrial operations generate noise, odors or traffic which make them incompatible neighbors with residential or most commercial uses.

Isolated older industrial areas surrounded by residential uses, such as the area west and south of Westwood Manor and the industrial areas west of St. Louis Road, should be designated and redeveloped for residential use. Industrial uses should be phased out only when they can be demonstrated to be no longer economically viable.

The Commercial land use designations are divided into three categories:

The **Central Business District** designation includes retail, professional office, civic, hotel, theater and similar uses.

It forms the center of the City, and is designed to be a high-intensity, pedestrian-oriented activity area, with shops and services, banks, offices, restaurants and entertainment which support a variety of activities, both day and night. The constraints and character of this area resulting from its development prior to the automobile should be recognized and provided for through the use of parking in-lieu fees, less-demanding private parking standards and public parking lots.

General Commercial areas, combining the former University and Neighborhood Commercial designations, will also provide the full range of retail, entertainment and service commercial uses for the consumer. General Commercial development must be compatible with the surrounding residential uses and provide convenient access for patrons arriving by car and bicycle or on foot. The primary difference between the General Commercial areas and the Central Business District will be in the area of parking. Businesses in the General Commercial area will be expected to provide enough parking on-site to meet the demand generated by the use. Since these are generally newer, less-dense developments, providing adequate parking is generally feasible. General Commercial areas are located within or near residential areas. The General Plan Map indicates nine General Commercial areas, two adjacent to the CBD and the remainder in outlying locations near residential neighborhoods. The Uniontown, Valley West and Sunny Brae Shopping Centers are the larger General Commercial areas. The vacant property south of the Valley West Shopping Center should be zoned General Commercial. The southern tip of this property could also be considered as a suitable site for senior citizen housing.

The **Thoroughfare-Commercial** land use designation permits hotels, motels, Recreation Vehicle Parks, theaters, restaurants, auto sales centers, gas stations, mini-marts and similar uses which attract tourists and local patrons in automobiles. The Thoroughfare Commercial designation is not appropriate for general retail sales.

Thoroughfare commercial uses are appropriate at highway interchanges where they are easily accessible by car and highly visible from the road. The area designated for Thoroughfare Commercial is at the U.S. 101 and Giuntoli Lane interchange, west of Valley West Boulevard.

** IMPLEMENTATION **

** GENERAL **

- ** A **** The City should take an active role in encouraging the expansion of existing businesses and attracting of new business to Arcata. The City shall maintain up-to-date information on available private and public business assistance programs and help Arcata businesses in using the programs. The Arcata Economic Development Corporation, the Redevelopment Agency or other business assistance agencies should be utilized as appropriate.
- ** B **** The Land Use and Development Guide should be amended to implement the changes proposed in the Land Use Categories in the General Plan Map section. These changes include the combining of the present University and Neighborhood Commercial designations into a more flexible General Commercial zone. The Valley West and Uniontown Shopping Centers should be designated General Commercial. The present Heavy Commercial zone and areas of the present Manufacturing and M-10 zones should be placed in a newly created Industrial-Commercial zone which would allow for light industrial, heavy commercial and some retail and service uses.
- ** C **** The City shall continue to actively support development of businesses through the full range of assistance programs available, including tax-increment financing, industrial revenue bonds, the Community Development Block Grant and federal business-financing programs.
- ** D **** The City shall seek to market Humboldt County and Arcata to industries not now located in the county in order to diversify the area's economy. The recruiting effort shall be targeted to industries which primarily will employ local residents. The City shall provide information on vacant private and public industrial sites. Where possible, the City shall work with other local jurisdictions and agencies for greater efficiency in marketing.

** INDUSTRIAL **

** D ** The industrial areas in Arcata are largely occupied by lumberrelated, land-extensive, heavy manufacturing operations and storage areas. Many of the potentially objectionable aspects of their operations, such as air and water pollution, are regulated by state agencies, but the noise, traffic and visual impact of Arcata's industrial areas are determined by City and County standards. The major industrial land use problem in Arcata now is the existence of heavy industry adjacent to suitable highquality areas which could attract new industrial development. Performance standards have been developed which will guide the location of new industry to appropriate sites based on their physical and environmental impact upon the surrounding area. In most cases, the required environmental impact review would contain all the information necessary to apply the performance standards.

** CBD **

** F ** The City should establish a program of cooperation among property owners, community action groups and local lending institutions to make financing available for restorative maintenance of both commercial and residential structures in the CBD.

** G ** Enhancement of the CBD will require the active participation of downtown merchants and property owners. The City shall determine to what extent it can become involved and encourage improvements. A plan for a Downtown Revitalization Program, designed to produce a more viable shopping environment, shall be created by the Community Development Advisory Committee, which would outline improvements in the following areas:

- * Public parking lots should be developed around the perimeter of the CBD, financed possibly by a combination of assessment district, in-lieu fees and tax-increment funds.
- * High-density housing on the perimeter of the CBD and additional housing in the downtown

should be encouraged to help provide greater pedestrian use of the CBD at all times.

- * Specific improvements should be considered to enhance the beauty and convenience of the downtown, such as a Plaza design plan, a planting program, drinking fountains, awnings or other rain shields for pedestrians, separate bicycle lanes, mid-block crosswalks around the Plaza, shelters and benches at bus stops and bicycle parking racks.

The City shall investigate the feasibility of forming a special assessment district and/or using its newly established Redevelopment Agency to finance the Downtown Revitalization Program. The redevelopment agency could use a combination of tax-increment financing, grants, special assessments and government loan programs to finance major improvements. A civic group such as a downtown merchants or businesspersons association or a fraternal organization could to raise money for the improvements. Some of the work itself could be done by civic groups or craftspersons hired by individual stores.

**** COMMERCIAL ****

- ** H **** The basic concept of the present City sign ordinance has been effective in improving the appearance of Arcata and should be retained. Minor refinements may be appropriate based on the City's experience in using the ordinance over the last eight years.

CITY OF ARCATA
TECHNICAL BACKGROUND REPORT
ECONOMIC ENVIRONMENT
JUNE 1985

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INTRODUCTION

The Economic Environment Section of the General Plan is not one of the General Plan Elements mandated by the State. The City of Arcata has chosen to address this issue area as a separate chapter in the General Plan because improved employment opportunities is a major concern of the community.

This Technical Background Report contains the information and analysis which serves as the base for the policies and programs. The goals, policies and programs developed to meet the identified economic needs are presented in the General Plan in the Economic Environment Section. Many reports and plans have been prepared in the last ten years on the economy of Humboldt County and Arcata. This report uses the findings of these many studies but will not re-state the considerable data available. A bibliography of these reports is included with this report.

The General Plan is re-evaluated and updated every five years. The previous update was done in 1980.

Historical Development

Urban development began in Arcata and Humboldt County during the 1850's gold rush which brought a large number of people to California and Humboldt County. The economy of the Settlement Period of roughly 1850 to 1885 was based on gold mining in the Trinity, Klamath and Salmon river basins. Arcata was a major supply center and transportation terminal for the mines.

Beginning in the 1870's, logging began to replace mining as the backbone of the areas economy. By 1900, Arcata was a prosperous lumber mill town of over 2,000 people.

Lumber remained the main force in Humboldt County and Arcata into the 1970's. The peak in lumber industry employment came in the 1960's when Humboldt County's population reached 100,000 and Arcata had a 1960 city limits population of 5,235.

In the 1960's and 1970's the growth of the Humboldt Normal School into a rapidly growing Humboldt State University became the major factor influencing the size and character of Arcata. By 1970, Arcata had a population of 8,895 and by 1980 the population had reached 12,850. Construction of housing for the growing H.S.U. enrollment was the main factor in this growth.

Lumber industry employment has been declining since the late 1960's. The enrollment of H.S.U. reached a peak in 1978 at 7,700 full time equivalent units and has now stabilized at between 5,000 and 6,000 students. Over the next ten years, both University enrollment and lumber industry employment are expected to remain steady or decline slightly. Future growth will be dependent on expansion of employment in the tourism industry and the diversification of manufacturing.

REGIONAL FACTORS

Overall Employment

An analysis of the economic situation in Arcata alone does not present a true picture. Arcata is part of the Humboldt Bay labor market which includes the entire area from McKinleyville to Fortuna and east to Blue Lake. Economic events anywhere in the labor market area will have a direct effect on the residents of Arcata.

Lumber Industry Trends

The most powerful economic trend affecting Humboldt County's economy has been the decline since 1965 of the lumber industry. In 1965 there were over 9,000 persons employed directly in the lumber industry. This represented over 25% of the total employment in the County at the time. Competition from Canadian and southeastern mills, exhaustion of first growth redwood stock and continual automation in the industry have reduced lumber industry direct employment by over half. In 1983, this long term trend combined with the national recession reduced total Humboldt County lumber employment to a low of 3,500 persons. In 1985 the employment level has recovered to 4,300 with all active mills operating at full capacity.

There are still a number of old growth mills operating in the County including the Alliance Road plant of the Simpson Lumber Company. These mills must eventually either be converted to second growth mills or closed. The number of old growth trees available in the County is limited and likely to be functionally exhausted by 1990.

Large portions of the private and public timber lands in the County are planted in second growth timber. Major replanting programs began in the 1940's and 1950's. These second growth resources will be available by the 1990's. Once old growth stocks are gone and the industry is fully adapted to operating from sustained yield second growth production, employment in the industry is likely to be fairly stable.

Second growth mills are generally much less labor intensive than the older first growth mills. It is anticipated that timber industry employment should stabilize by the mid 1990's at perhaps 2,500 to 3,000 direct employees.

Fishing Industry Trends

The fishing fleet based out of Humboldt Bay has been one of the largest on the west coast. Over 2,500 people had been estimated to work in the industry though exact numbers are hard to find because of the seasonality and mobility of the employment. In recent years the industry has been crippled by reduced seasons

and catches. Destruction of spawning habitat by logging, reduced river flows as a result of diversion of water to the central valley canals, over fishing by the combination of commercial, sport and Indian fishermen along with changes in ocean current patterns have all contributed to greatly reduced returns of salmon to the areas rivers. In an attempt to protect the resource, regulatory agencies have nearly eliminated the commercial fishing season. Many fishermen have been forced out of business or to move to other harbors.

Some efforts are underway to restore the upstream habitat grounds and hatcheries have been created to maintain the stocking of the rivers. It will be many years before stream enhancement can be expected to have a significant effect on fish catch levels.

Tourism

Tourism has been the most consistent growth sector in Humboldt County's economy over the last ten years. A recent State Department of Tourism report indicates that up to 2,500 jobs in Humboldt County are a result of tourist expenditures. Tourism employment cannot be measured directly because many jobs in the retail and restaurant trade are partially supported by tourist traffic and partially by local purchases.

The bulk of tourist traffic in Humboldt County is travelling through the County to some other destination. A large portion of this traffic is travelling in Recreational Vehicles and is primarily attracted by the natural amenities of the County. These travellers can be expected to spend less money in the County than travellers who must eat in restaurants and spend the nights in motels. One of the objectives of tourism development in the County is the development of visitor attractions in the communities which will encourage visitors to stay longer and spend more while they are here.

Other Industry

The other largest income importing sector of the economy is government. Humboldt State University employs approximately 1,000 persons. The Federal and state agencies dealing with the parks and forests in the County employ an additional 500 to 1,000 people with a peak during the summer months.

Non-timber related manufacturing is a small but growing portion of the economy. In 1970 there were 900 persons employed in other manufacturing. Some portion of this sector is at least partially supported by timber industry work, such as metal fabricating shops which do special order jobs. In recent years there has been steady growth in the number and size of other manufacturing companies totally unrelated to the timber industry. Several small companies manufacture outdoor apparel, recreational car top carriers and wet suits. There are also a number of custom

woodworking shops which do work for both the local and export market. Total employment in other manufacturing has grown to 1,200 persons in 1985.

A number of the growing other manufacturing companies are located in Arcata and this sector is considered an important factor in Arcata's economic future.

Humboldt County is at a major locational disadvantage for any industrial operation for which transportation costs are a major factor. The County is nearly 300 miles from the nearest major population center and it is not on any major interstate transportation route. Production of low value, high bulk products will generally not be economical. The exception to this rule are those products for which the raw material is native to the County and the processing operations increase the value of the product by more than any increase in shipping costs. Timber based building products are the obvious example.

Humboldt County is fortunate to have one of the few natural protected harbors on the West Coast. It is also one of the least developed. The facilities which now exist are suited for handling bulk products such as lumber, paper pulp and wood chips. General merchandise shipping facilities are very limited and will be very costly to develop.

Fortunately, most of the fastest growing industries in the U.S. deal in products which have a high value to bulk ratio. These industries have fewer limitations on their locations. This change in the character of manufacturing is one of the causes of the significant movement of population from the Northeast to the Southwest and from metropolitan areas to rural areas. Natural amenities and personal choice are becoming the dominant factors in industrial location. As information industries become larger portions of total employment, Humboldt County's quality of life should become even more of an asset for attracting growth.

Commercial

The health of the retail, service and other commercial sectors of the economy are dependent on the income importing sectors discussed above. Since Humboldt County does not manufacture the full range of products needed by its residents, it must import most goods. The ability of Humboldt County residents to purchase imports is directly dependent on the amount of income which flows into the County from the sale of goods and services to people outside of the County.

The retail market of the County is dominated by Eureka, which because of its location and population is the central market place for Humboldt, Del Norte and northern Mendocino counties. Eureka's advantage is particularly significant for major durable goods such as automobiles, appliances, furniture, building materials, and clothing. This market dominance would be

predicted by accepted theories of economic geography and is to some extent unavoidable.

In a similar way, Eureka loses some sales to the larger regional shopping areas in Santa Rosa and Redding. The extent of this leakage outside of the County is offset by tourist expenditures in the County. In fact, per capita taxable sales in the County are only slightly below per capita sales in the State of California despite a 20% lower average per capita income.

A major issue in the commercial sector in 1985 is the proposal to build a 600,000 square foot regional shopping center and a 60,000 square foot discount department store in Eureka. This center should reduce leakage of sales outside of the County, however the bulk of the center's sales is likely to be at the expense of other retail areas in the County.

LOCAL FACTORS

Humboldt State University

The University with its faculty, staff and related operations is by far the leading employer in Arcata and in fact, the County. The University employs roughly 1,000 persons directly. It has been estimated that the University contributes approximately \$6,000 per student per year to the County, or roughly \$3.5 million dollars per year. The bulk of this money is obviously spent in Arcata.

The operation of the University during the fall, winter and spring acts as a leveling influence for Arcata's economy. The summer break for the University corresponds to the peak summer logging and tourist season. As a result, Arcata's economy is more stable throughout the year relative to other parts of the County.

The University also dominates the demographics of the community. As discussed in more depth in the Background Report for the Housing Element, Arcata has a family income well above the County average but the presence of a large number of very low income unrelated individuals results in a low per capita income.

Lumber Industry

Employment in lumber mills in Arcata has declined significantly over the years but the industry still includes many of the largest non-governmental employers in the community. A list of the major mills is shown below.

Employers	Number of Employees
Simpson Timber Co.-Alliance Road	130
Louisiana Pacific -Particle Board	100

Beaver Lumber Co.	30
Pacific Clears -Pine Mill	30
P.V.M.	25
Reid and Wright	20
Bob Britt Lumber	20

There are also several smaller mills. Overall employment in the industry in Arcata is likely to continue to decline in conjunction with declines County-wide. None of the mills indicated above are known to be likely to close in the near future but there is a strong likelihood that some will close or reduce employment over the next five years. The Simpson Alliance Road plant is an old growth mill and if not adapted to second growth its long-term viability is questionable.

Tourism

Arcata has not historically been as oriented to tourism as Eureka, Ferndale or Trinidad. Much of the tourism in the past has been by University related visitors. A lack of promoted visitor attractions and places to stay have limited the benefit gained by Arcata from the tourist traffic through the County. In recent years, efforts have increased to more aggressively tap the tourist market.

The major visitor attractions in Arcata have been the many historic homes near the downtown. More recently, the marshes being reclaimed and developed between the City and the Bay have become a major attraction. The Arcata Marsh and Wildlife Sanctuary is becoming well known as one of the finest bird watching locations on the west coast. The City has also supported the development of the Pacific Arts Center as a visitor attraction. Fifteen to 25 percent of the attendance at this professional theater group's plays have come from out of the County. Other resources which have been identified as possible visitor attractions include the Community Forest and the City's Redwood Park, the proposed Community Sports Complex and the work of local artists and craftspersons.

There are presently five motels in Arcata with a total of 235 rooms. They include a Ramada Inn and Motel 6 in Valley West, the Holiday Gardens on Alliance Road and the Fairwinds and Red Robin motels on G Street. Two Bed and Breakfast Inns have also been established in the City.

A 60 room economy motel is proposed for construction in the winter of 1985-86 in Valley West. The historic Arcata Hotel on the Plaza in the downtown is planned for a complete renovation and reopening in late 1985. The Fairwinds motel is partially used as weekly and monthly rentals during the school year. The Red Robin may be demolished and replaced with an upgraded restaurant in 1985.

Two private parties are exploring the feasibility of constructing a Recreational Vehicle park on the south side of the City near the Bay. The City presently operates a very small, free R.V. park near the downtown.

Other Industry

The growth of a number of small diversified manufacturing companies over the last ten years has been one of the most encouraging factors in the local economy. Many of these companies are the creations of graduates of the University who remained in the community for its high quality of living and began their own companies. Products of these firms include car top carriers, backpacking equipment, jewelry and custom furniture. The largest of these companies are shown below.

Employers	Number of Employees
Yakima Products-car top carriers	35
Holly Yashi-jewelry	25
Moonstone Mountaineering	20
Blue Puma	15

The community is also the home for a large number of custom furniture/cabinet makers and a variety of potter's and other crafts type manufacturers. None of these companies employ more than ten employees but taken together they represent about 50 to 100 full time jobs.

Commercial

The Commercial sector of the Arcata economy has closely followed the national and regional economy. After showing modest but steady real growth through 1979, retail sales declined dramatically in 1980, 1981 and 1982. Taxable sales in Arcata dropped from 62.3 million in 1979 to 58.3 million in 1982. If adjusted for inflation, this drop is even more significant. In 1983, however, sales expanded to 66.6 million. This recovery continued strongly in 1984 with 75.5 million in taxable sales.

Studies comparing Arcata's sales categories to State and County averages show great strength in food related categories. Grocery sales, restaurants and liquor sales all exceed County averages and are close to or above State averages. The presence of the Arcata Co-op, which draws patrons from all over the County is probably the major factor in explaining the Grocery sales strength. Arcata does poorly in the areas of clothing, appliances and furniture. Sales of these durable goods categories are dominated in the County by Eureka.

The number of sales outlets in the City has grown much more rapidly than the related taxable sales. Between 1979 and 1983, the number of Sales Tax Permits in the City grew by 25% while the

sales by those outlets only grew by 6.5%.

Studies of taxable sales in the City have indicated that the sales per square foot on commercial space in Arcata are generally 30 to 80 percent of recommended standards. Apparel and food stores have the lowest percentage compared to national standards.

LAND AND SPACE AVAILABILITY

Industrial

The market for industrial land has been greatly influenced by the decline of the timber industry. There are 460 acres in the City Limits zoned for industrial, of which 180 acres are vacant. Most of the vacant land consists of previously developed lumber mills which have been closed. In many cases a large proportion of the land considered vacant is in fact undevelopable because it was used as log pond and would require draining, removal of organic wastes and backfilling with new soil to be useable. Perhaps as much as 45 acres of the available vacant land is in this condition.

Of the actual developable industrial land, the largest property is the previous site of the Simpson Mad River Plywood Plant on West End Road. The property contains 52 acres, however, as much as 20 acres is not presently usable because it is log pond or sewage clarifier pond. This facility was closed by Simpson in 1980 and is now owned by a private developer and leased out to several small wood and wood waste related companies. Much of the existing 200,000 square feet building is vacant or underutilized. The building is in need of significant repair and rehabilitation. A property directly east of the main building is presently being developed as a small sawmill. There is some vacant land available on the site but much of the property is old log pond or sewage clarifier pond. If rehabilitated, this property could be a major asset in providing substantial low cost space suitable for wood products related businesses.

The next largest site is the City owned Aldergrove Industrial Park which is also in the West End Road Industrial area. This property was also once a lumber mill. The City purchased this 50 acre property in 1979 and using grant funds, has filled the unstable portions of the property, converted the old log pond to a lake and drainage retention basin, installed water and sewer lines and built a central access road. In 1983, the first building was built in the Park as the home for Moonstone Mountaineering, Blue Puma and Bubbles. Thirty one acres of developable land is available in the Park. The Park has been designed for labor intensive, light industrial users.

An additional fifteen acres of vacant or underutilized private industrial land exists in the West End Road Industrial Area. Four new buildings have been built in recent years at the north end of the industrial area. Extension of water and sewer

facilities for the Aldergrove Park has made possible this new development.

West and south of the Arcata downtown are three properties which were once the Twin Parks, Arcata Redwood and Arcata Plywood mills. These properties now are used by the Beaver Lumber Company and the Pacific Clears pine mill. Approximately 50 acres of the 75 acres in these properties is vacant or used only for occational log storage. About 15 acres has been used as log pond and may be of questionable development value.

The south G Street industrial area has been fully developed in a variety of heavy commercial operations such as heavy equipment dealers, salvage yards and truck repair. About ten acres is available on properties which previously contained auto and truck repair operations. The entire south G area suffers from occasional flooding.

Another industrial area exists near the St. Louis Road overpass. This area contains one existing fence board manufacturer, and what was a major lumber wholesaler and transshipping operation. The decline of the lumber market, a fire and the closure of the railroad from 1983 to 1984 have curtailed the wholesaler's operation. This industrial area of about twenty developed acres is bordered by residential uses and in the long run may be best suited for redevelopment into residential uses.

The City's emphasis on the growth of light manufacturing makes the availability of small, relatively low cost, rental industrial space a major consideration. A shortage of this kind of space has been a constraint to small business growth in the past. The Creamery Building on 9th Street, the Cooper Building on Samoa Boulevard, Thomas Industries property on Guintoli Lane and the Arcata Plywood mill property provide a number of potential spaces in the 500 to 2,000 square foot range. This size range is popular with the crafts related companies in Arcata and the spaces available are generally full.

Rental rates for industrial space range from 10 cents per square foot per month for large amounts of space (10 to 15,000 square feet) in an open, minimally improved building such as the Mad River building, to 25 cents per square foot per month for very small areas (500-1,000 sq. ft.) or space in newer, better quality buildings.

Purchase costs for industrial land range from \$2. per square foot for smaller lots (one acre) in the industrial area west of the downtown down to perhaps \$.50 per square foot for 10 acres in the West End Road Industrial Area. One acre lots in the West End Road area are selling in 1985 for approximately \$1 per square foot (\$40,000 per acre).

As a result of the construction of new buildings, already finished or proposed for construction in 1984, by Moonstone Mountaineering, Blue Puma, Bubbles, Holly Yashi, Sholes Overhead

Door, and North Coast Fabricators, there may be a fairly significant supply of small industrial spaces on the market during the near future.

One of the existing restraints on light industrial development in Arcata is the historical dominance of heavy industrial uses in the designated industrial areas. The lighter industrial users, particularly any which might be attracted from outside of the area, are interested in a visually attractive location for their clients and employees.

Nearly all of the existing industrial area suffer from substandard street development. South G Street, West End Road and local streets in the Creamery area are of substandard width and the surfaces are deteriorating from their use by heavy trucks.

Commercial

The commercial areas of Arcata consist of the core area of the downtown and several smaller outlying shopping areas in residential areas.

The downtown is centered on a one block landscaped Plaza and consists of roughly one and a half blocks in all directions from the Plaza. The downtown has the largest concentration of financial institutions, restaurants and bars, theaters and general business offices in the City. Retail trade in the downtown is largely small specialty shops.

Efforts to strengthen the downtown in recent years have included the private renovation of the 30,000 square foot Jacoby's Storehouse into a multiple tenant specialty center. Efforts by the City include participation in the renovation and reopening of the 40 room Arcata Hotel on the Plaza and financing assistance to the developers of a new 22,000 square foot, multi-tenant Galleria between the Plaza and Uniontown.

Parking has long been an issue in the downtown. A 1981 study of the eight blocks adjoining the Plaza indicated existing parking on and off street of 360 spaces, or one space per 1,000 square feet of commercial building space. A prior study in 1977 indicated a similar ratio for the entire downtown. A minimum of 3 or 4 parking spaces per 1,000 square feet of commercial space is the recommended standard for a successful commercial area.

Some have argued that there is not in fact a parking problem because spaces are generally available in parking lots or on street in the area one block from the Plaza. Consumer surveys and merchant surveys, however, have indicated that there is a general perception that parking is a limiting factor to shopping in the downtown. The generally low level of sales per square foot by Arcata commercial establishments may be one reason why the parking problem is not as severe as the statistics would

suggest.

In addition to the downtown there are a number of significant neighborhood shopping areas. The largest are Uniontown, Valley West, and SunnyBrae. These centers include a major grocery, variety stores and miscellaneous specialty shops, restaurants and offices. These larger neighborhood shopping centers are roughly 10 acres in size and contain about 75,000 to 120,000 square feet of commercial space. While much of the business in these centers is from nearby residential neighborhoods, there is also comparison shopping on a City wide basis between the centers. The Valley West Center also serves as a major shopping area for nondurable goods for residents of Blue Lake, McKinleyville and northern Humboldt County.

The strip commercial area along G Street north of 12th Street also functions as a neighborhood center. This area is presently divided by zoning into a Neighborhood Commercial Area and a University Commercial Area.

Smaller neighborhood centers also exist in Westwood, Spear Avenue and Greeview. A very small neighborhood shopping area has been designated but not developed at the intersection of California Avenue and L.K. Wood Boulevard.

Rental rates for commercial space vary greatly depending on location, building condition, length of tenancy and size of space. A typical 1,000 square foot commercial space in the downtown could rent for between \$.40 per square foot per month and \$.65 per square foot (triple net lease). Some tenants who have been in one location for many years pay well below market rent.

Rental rates in the neighborhood centers would be likely to be between \$.20 and \$.50 per square foot per month for a 1,000 square foot space.

Commercial vacancy rates in Arcata have generally been very low, usually below 1% of total square footage. Buildings which become available are often filled by the relocation and expansion of existing businesses. The availability of a larger store space often sets off a sequence of business relocations.

Dispite the low vacancy rate, construction of new commercial space has been limited by high interest rates. New commercial space cannot generally be built and financed for a cost which allows it to be competitive with the \$.65 to \$.70 per square foot rents considered the top of the market.

ZONING DISTRICTS

Industrial

The City of Arcata presently has two industrial zoning districts.

The Industrial Zoning District has a one acre minimum lot size and is applied over most of the industrial land in the City. This zone allows general manufacturing, including lumber milling, warehousing/wholesaling and various heavy commercial uses such as heavy equipment sales and repairs. Heavy industrial uses such as asphalt manufacture, salvage yards and petroleum refining would require a Use Permit.

An M-10 Industrial District is applied over the industrial area around M Street between 8th and 14th Streets. This district allows a 10,000 square foot minimum lot size. The required setbacks from property lines are less in the M-10 than the Industrial because of the smaller lot size. The uses allowed in the M-10 are virtually the same as the Industrial except that Heavy Industrial uses are not allowed.

Commercial

A Heavy Commercial District has been applied along K Street, the south side of Guintoli Lane, at the southern end of south G Street and on the auto sales dealerships downtown. The uses allowed in this zone are very similar to those allowed in the industrial zones except this zone does not allow manufacturing. The General Plan description of the zone indicates that light manufacturing was intended to be allowed in this zone but this was not included in the zoning ordinance.

A Thoroughfare Commercial District has been applied along Samoa Boulevard, along Valley West Boulevard and south of Heindon Road. The purpose of this zone is to provide areas at major interchanges where services may be provided for persons traveling in automobiles. The zone has been complicated by its application to the Valley West Shopping Center and attempt to force development of a department store on that property. There has been a reluctance on the part of the City to allow a full range of permitted commercial uses in this zone for fear that businesses will relocate from the downtown into these outlying areas. The zone is further complicated by a General Plan Policy which prohibits the location of general retail sales in the Thoroughfare Commercial area south of Heindon Road. This policy is enforceable only because a Use Permit must be obtained for this type of business in this zone and a Use Permit must be consistent with the General Plan.

The 1975 General Plan adopted a philosophy that the downtown should be the major city wide shopping area in the community and attempted to implement this philosophy by restricting the variety of uses which were allowed in the other commercial districts. The Neighborhood Commercial Zone was intended to provide for businesses which served the day to day needs of the immediate surrounding neighborhood. Businesses which rely on City wide comparison shopping were not to be allowed in this zone. The University Commercial district was to serve a similar function for the student population at the University and in Northtown.

Possible Changes

In preliminary discussions at the beginning of the 1985 General Plan update process, the City Council and Planning Commission expressed a desire to allow considerably more diversity and choice within the commercial and industrial zones. There was a consensus that the protectionist approach to supporting the downtown was unnecessary. Efforts to encourage the health of the downtown should involve active assistance in the downtown rather than restrictions on business elsewhere. There was also a strong feeling that the City should emphasize the start-up and development of small businesses. Because of the limited vacancy factor in the commercial areas and small industrial spaces, the Council and Commission felt that low impact commercial and industrial businesses should have the ability to seek available locations throughout the commercial and industrial areas of the City. There was also a belief that the combination of Design Assistance and Zoning Administrator review would be sufficient to prevent or mitigate any land use conflicts which could result from this more liberal approach.

Changes to implement this new philosophy are reflected in the changes to the Economic Environment Chapter to the General Plan.

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**** II. CONSERVATION ****

This chapter on conservation contains policies and implementation measures for the preservation of open space, the conservation of natural resources, and the conservation of energy and food productive capacity. This Chapter separates these issues into four separate areas:

- CONSERVATION AND OPEN SPACE
- CONSERVATION OF NATURAL RESOURCES
- ENERGY AND FOOD PRODUCTION
- SOLID WASTE MANAGEMENT

The CONSERVATION Chapter is also divided into three general sections for Policies, General Plan Map information, and Implementation Measures to carry out the policies.

**** POLICIES ****

**** CONSERVATION AND OPEN SPACE ****

These policies deal with the suitability of land for urban and non-urban uses.

- ** 1 **** Land should be used for the purpose for which it is most suited by virtue of its inherent natural characteristics, as modified by its locational relationships, whether that use be urban development, natural resource preservation and utilization, or agricultural production.
- ** 2 **** Areas over 25% slope should generally be conserved in a natural condition; excavation and removal of vegetation should not occur, although selected thinning of timber stands or removal of hazard trees is reasonable. Areas of 15% and greater slope is not appropriate for new building sites.
- ** 3 **** Agriculturally suitable land (60% and above on the Storie Index) should be preserved for agricultural use, wherever possible. Grade 1 and Grade 2 agricultural land shall not be developed.

- ** 4 ** Floodprone areas should be used for agricultural and recreational purposes and kept free from urban development wherever possible.
- ** 5 ** Rivers, streams and adjacent areas, marshes, and other wetland areas should remain in a natural condition whenever possible.
- ** 6 ** Unique vegetation and wildlife areas should remain in a natural condition. Such areas include the sand dunes and backdune woodland, eel grass area, salt marshes, and special habitat areas (tern and osprey nesting areas, cormorant rookery, harbor seal area and egret roost). Selected development in the coastal forest could be allowed if integrated with the woodland vegetation so that the diversity and integrity of woodland and forest ecosystems are protected.
- ** 7 ** In order to preserve natural resources, to conserve agricultural land, to provide recreational opportunities, and to protect wildlife habitat areas, the following areas should be preserved as open space, free of urban uses:
- * Natural resource land: ocean beach, sand dunes, backdune woodland, Arcata Bay, Mad River, Mad River Slough, buffer strips along the Mad River, Jacoby Creek, Jolly Giant Creek, Janes Creek including Sunset Creek, Grotzman Creek, Beith Creek, Campbell Creek and portions of the coastal forest characterized by steep slopes and subject to geologic hazards.
 - * Agricultural land: agriculturally suitable areas: areas which are currently in agricultural production and/or underlain by soils of Grades 1 or 2 (above 60%) on the Storie Index (as stated in Chapter I., URBAN DEVELOPMENT AND COMMUNITY DESIGN, Policy 1).
 - * Recreational land: neighborhood and community parks, Baywood golf course, and buffer strips along Janes Creek.
 - * Wildlife habitat: wetland habitat, riparian habitat, eel grass, and special habitat areas.
 - * Wetlands: those lands determined by the California Coastal Commission and the U.S. Army Corps of Engineers to be wetlands, including but not limited to: intertidal mudflats; saltwater, brackish, and freshwater marshes; riparian areas; diked wetlands used for agriculture; former log ponds.

**** CONSERVATION OF NATURAL RESOURCES ****

The City of Arcata recognizes six natural resources as being of particular importance to the City. Each of these resources is described in detail in the 1989 Open Space and Conservation Element Technical Report. Policies (and implementation measures) for these resources are separated by topic. These resources are:

- Agricultural Land
- Forest Hillside Land
- Wetlands
- Streams
- Air Quality
- Views and Vistas

Agricultural Land

**** 8 **** The City should develop equitable ways of protecting prime agricultural land from urban development. Such methods may include but are not limited to the following:

- * create an agricultural easement program;
- * develop funding mechanisms to purchase development rights on agricultural land in or near City;
- * create a land trust that can accept development rights but be controlled by farmers;
- * City purchase of development rights;
- * Transfer development rights from prime agricultural land to urban zones that can accommodate higher densities;
- * Use Planned Development program to develop portions of agricultural sites in trade for development rights on remainder.

**** 9 **** The City should officially designate agricultural preserves, pursuant to the California Land Conservation Act of 1965 (Williamson Act), for the purpose of entering into contracts [1.] with land owners within these preserves. Agricultural preserves may be less than 100 acres in size. [2.] The size is justified by the following:

- * Arcata's agricultural land is a significant resource.
- * Arcata's Grade 1 and Grade 2 agricultural soils make up a significant part of Humboldt County's supply of prime agricultural soils.
- * Arcata's prime agricultural lands have the potential for intensive agricultural use.

-
1. The contract would require the landowner to agree not to develop the land for a period of 10 years; the land would be assessed according to its value for agricultural purposes and not urban use.
 2. A minimum preserve size of 100 acres is usually required; however, Government Code Section 51230 states that "A county or city may establish agricultural preserves of less than 100 acres if it finds that smaller preserves are necessary due to the unique characteristics of the agricultural enterprises in the area and that the establishment of the preserves of less than 100 acres is consistent with the general plan of the county or city."

- ** 10 ** The City should establish the "right to farm" that will:
- * acknowledge that owners of prime agricultural land have certain rights to make agricultural use of their land;
 - * identify potential conflicts between agricultural production and adjacent urban development;
 - * establish that such conflicts are an inevitable and acceptable tradeoff in order to protect a valuable resource;
 - * inform owners of adjacent non-agricultural parcels that a right to farm has been established.

Forest Hillside Land

[Forest hillside land is addressed by Policy 2, CONSERVATION AND OPEN SPACE, of this Chapter]

Wetlands

- ** 11 ** The City supports a "no net loss" policy with respect to wetlands and wetland values.
- ** 12 ** The City encourages enhancement of wetlands.
- ** 13 ** The City is in favor of wetland mitigation, including enhancing or replacing wetlands, if wetland values lost to development can be replaced.
- ** 14 ** The City recognizes that opportunities for acceptable wetland mitigation are limited in the City of Arcata. Mitigation may not be desirable if creating a wetland to mitigate development would result in the loss of housing or industrial land or prime agricultural land.
- ** 15 ** The City supports assessment of wetlands, for the purpose of property taxes, that takes into account that wetlands are not developable.

Streams

- ** 16 ** To protect structures and critical facilities and to provide protection of existing habitat values, the City

shall encourage and promote flood protection practices which manage flooding problems on a watershed basis.

**** 17 **** With respect to streams, City policy shall be to protect, restore, enhance Arcata's creeks and their watersheds including the following objectives:

- Make creeks self-cleaning for flood control
- Keep creeks unculverted
- Prevent stream degradation
- Acknowledge urban creeks as an aesthetic resource
- Restore and enhance fish populations in creeks
- Utilize creeks for recreation, where appropriate
- Educate the community on importance and care of creeks
- Create a continuous riparian corridor from bay to headwaters.

Air Quality

**** 18 **** The City shall coordinate efforts with the Air Quality Management District and the Arcata Fire District to improve Arcata's air quality.

[Air Quality is also referred to in Policy 22 of this Chapter, under Energy and Food Production; and in Chapter V. PUBLIC FACILITIES, Policies 2 and 5]

Views and Vistas

[The City's significant views and vistas are addressed by policy in Chapter I. URBAN DEVELOPMENT AND COMMUNITY DESIGN Policies, particularly Policies 25 and 28]

[The City of Arcata's adopted scenic routes are identified in APPENDIX K: ARCATA'S SCENIC ROUTES]

**** ENERGY AND FOOD PRODUCTION ****

**** 19 **** The City should encourage more diverse and intensive agricultural production in the Planning Area to improve the economic base, provide employment, and develop self-suffi-

ciency in food production. More energy-efficient crop production could be considered as a means to lessen dependence on high energy-consuming methods of production. Prime agricultural lands currently used for grazing could sustain more intensive agricultural use and thereby be more economically viable for commercial agricultural use.

- ** 20 ** The City should encourage land uses which are self supportive, or minimally dependent upon large-scale imports of non-renewable fuel. Arcata's overall urban development pattern should be shaped to reduce the necessity both for numerous and lengthy automobile trips.
- ** 21 ** The City should support efforts which ensure that, prior to any future on-shore or off-shore recovery of oil and/or gas which can potentially impact the Planning Area, the following conditions are complied with:
- * the need for the proposed recovery is clearly demonstrated, and the project fully conforms with regional, state and national energy policies;
 - * alternative energy sources, locations and schedules have been fully considered;
 - * the proposed recovery's short and long-term consequences are fully disclosed, and opportunities for thorough public review at the local level are provided;
 - * any adverse environmental, economic, fiscal and social impacts, as well as growth-inducing effects and other secondary impacts which extend beyond the proposed recovery's immediate location and time-frame, will be mitigated to the greatest extent possible. Air quality is of particular concern.

** SOLID WASTE MANAGEMENT **

- ** 22 ** The "General Plan Waste Management Element and Solid Waste Task Force Final Report" is adopted, by reference, as part of this Chapter.

GENERAL PLAN MAP

The policies listed above are reflected on the General Plan Map in several ways. The Public Facility (Parks) category includes public recreation areas, such as Redwood Park and the Community Forest, and several neighborhood parks. (See the Parks and Recreation Facilities Chapter for a more detailed discussion of parks and recreation areas.)

The Natural Resource Protection (Preservation) designation on the General Plan Map should include the areas identified in Policy 7 as natural resource land and wildlife habitat, including areas that are City parks, such as the Janes Creek /McDaniel Slough Linear Park, Aldergrove Marsh, and the Arcata Marsh and Wildlife Sanctuary. An exception to such designation would be for "pocket" wetlands on parcels large enough to accommodate development without adversely impacting the wetlands, wetlands used as grazed agricultural lands, and riparian areas in other zones. These areas will be protected by standards applicable to streams and wetlands.

The General Plan Map includes two categories under the Rural heading for agricultural land and open space, and a category for forest hillside areas. Although these areas would not be subject to a complete ban on development, they are not suitable for intensive urban uses because of steepness, hazards, availability of services, and the irreplaceability of highly productive agricultural soils.

Agricultural land categories include a designation intended to preserve land for agricultural production (Agriculture Exclusive), and a designation allowing very low density residential development, providing "open space" on agricultural land (Residential Agriculture). Structures associated with agricultural production, such as barns and farmhouses, would be appropriate uses in the agricultural areas. The Agriculture Exclusive designation is also appropriate for wetlands that are used as grazed agricultural lands.

The Forest/Hillside designation allows development that will allow the steep slopes and open space character of Arcata's hillsides to be preserved. Individual homesites would be acceptable in the hillside areas, as long as precautions were taken to prevent the excessive removal of vegetation, and if strict grading controls were enforced to prevent erosion. Development and grading on areas characterized by over 25% slope should be avoided, and adequate review of development proposals in all hillside areas should be carried out to ensure that seismic and geologic hazards are avoided or mitigated.

The Natural Hazard overlay combining designation regulates development in areas subject to flooding, liquefaction, slope stability hazards, and seismic hazards by applying standards that will mitigate these hazards. The Wetlands overlay combining designation will protect wetlands by indicating that wetland protection standards apply.

**** IMPLEMENTATION ****

**** CONSERVATION AND OPEN SPACE ****

- ** A **** All development proposals, except those associated with agricultural activities, in the Conservation Areas (listed in Policies 3 - 7) shall be subject to the environmental review process, to determine if the proposed developments are compatible with identified natural processes. Such development shall not be approved if it is found to be incompatible with such processes, unless adequate mitigation measures can be taken.
- ** B **** A flood plain overlay zone shall be applied to all areas subject to inundation according to the Flood Insurance Rate Map (Flood Hazard Boundary Map) developed by the Federal Emergency Management Agency (FEMA) or the Federal Insurance Administration to delineate the areas of special flood hazards and the risk premiums zones applicable to the City. Agricultural and industrial uses would be permitted only if adequate flood proofing measures were taken and it could be demonstrated that such development would not cause additional flooding and/or drainage problems in other areas.

**** CONSERVATION OF NATURAL RESOURCES ****

Agricultural Land

- ** C **** The City shall apply Agricultural Exclusive zoning to all areas designated for agriculture on the General Plan Map. The minimum lot size in the Agricultural Exclusive zone shall be 20 acres. The minimum lot size in the Coastal Agriculture Exclusive zone shall be 60 acres (see F).
- ** D **** The City identifies the following areas of prime agricultural land as appropriate for preservation programs including but not limited to agricultural open space easements or agricultural preserves under the Williamson Act and shall encourage owners of these agricultural areas to enter into such preservation programs.
- * Vaissade North
 - * Gallacci and Fraser Properties
 - * Sun Valley Bulb Farm
 - * Westwood
 - * Foster Avenue
 - * Creamline Dairy

* Windy Acres

All other areas in agricultural zoning may be considered for such preservation programs.

- ** E ** No subdivision shall be approved within an agricultural preserve which would result in lot sizes less than 60 acres in the Coastal Zone or 20 acres, not in the Coastal Zone.
- ** F ** The following implementation measures are excerpted from the adopted Local Coastal Plan:
1. The City shall apply Coastal Agricultural Exclusive zoning to all areas designated for agriculture on the Local Coastal Plan Map.
 2. The minimum lot size in the Coastal Agricultural Exclusive zone shall be increased to 60 acres.
 3. The Coastal Agricultural Exclusive zone shall include the following:
 - (a) The "Permitted Uses" section shall include: "Agricultural Structures - includes greenhouses or other nursery structures erected over exposed soil."
 - (b) The "Conditionally Permitted Uses" section shall include: "Greenhouses or other nursery structures erected on concrete perimeter foundations may be permitted if no less environmentally damaging alternate is available."
 - (c) Commercial greenhouses will not be allowed to locate within a wetland.
 4. Where wetlands are seasonally farmed, continued agricultural use of the wetlands is allowed. Expanding farming operations into non-farmed wetlands by diking or otherwise altering the functional capacity of the wetland is not permitted. Farm-related structures (including barns, sheds, and farm-owner occupied housing) necessary for the continuance of the existing operation of the farmed wetlands may be located on an existing farmed wetland parcel, only if no alternative upland location is viable for such purpose and the structures are sited and designed to minimize the adverse environmental effects on the farmed wetland. Clustering and other construction techniques to minimize both the land area covered by such structures and the amount of fill necessary to protect such structures will be required. The location of the

wetlands shall be determined by use of the adopted Coastal Wetlands Map.

5. Private and public non-vehicular recreational activities such as hiking, riding, fishing, hunting, and other recreational activities which do not require permanent structures, facilities, or foundations may be permitted in the Agricultural Exclusive zone if they do not interfere with adjacent agricultural uses or limit potential of the site to return to agricultural use or significantly displace the wildlife utilizing the area, especially in seasonal wetlands. This recommendation shall be implemented in the Coastal Land Use and Development Guide.

**** G **** The City shall create a "right to farm" mechanism that will establish the right to conduct agricultural operations on prime agricultural land zoned Agricultural Exclusive or Coastal Agricultural Exclusive. Features of the mechanism could include, but not be limited to:

- * a statement establishing and defining the rights of owners of prime agricultural land to conduct agricultural operations;
- * a mandatory notice to buyers of adjacent non-agriculturally zoned properties of potential nuisance from agricultural operations;
- * strategies to address trespass and vandalism of agricultural land.

Forest Hillside Land

(See Implementation Measure I. of Chapter I., Urban Development and Community Design)

Wetlands

**** H **** Implementation measures regarding wetlands are intended to include adopted Coastal Plan policies regarding wetlands; these have been summarized but are found, in their entirety, in the Arcata Local Coastal Plan.

Where General Plan wetlands implementation exceeds Local Coastal Plan implementation or involves implementing new measures not included in the Coastal Plan, the City will amend the Coastal Plan to conform to the greatest degree possible within the Coastal Act.

- ** I **** The City shall encourage the County Tax Assessor to assess wetland properties in a manner that takes into account that wetlands are not developable.
- ** J **** The City shall maintain the Natural Resource Protection designation on all tidelands and water areas of Arcata Bay, and shall declare that these areas are fragile coastal resources that require protection from uncontrolled access.
- ** K **** The City shall adopt a Wetlands Map (or maps) showing the location of wetlands within the City of Arcata. The wetlands map(s) shall include the adopted Local Coastal Program Coastal Wetlands Map.
- ** L **** The City shall add a Wetlands combining zone overlay to the Arcata Land Use and Development Guide Zoning Designations. The Wetlands overlay zone shall be combined with any principal zone and shall apply to wetlands shown on the Wetlands Map or otherwise determined to be wetlands.
- ** M **** The City shall develop Wetlands Development Standards and Wetlands Buffer Area Development Standards for Arcata's wetlands outside the Coastal Zone and adopt as part of the Arcata Land Use and Development Guide. Development standards for wetlands outside the Coastal Zone shall be generally consistent with Coastal Plan Standards except as necessary to take into account the unique nature of Arcata's wetlands outside the Coastal Zone. Arcata's wetlands outside the Coastal Zone tend to be artificial wetlands.
- All development within the areas identified on the Wetlands Map as wetland shall require compliance with the standards. All development in Coastal Wetlands or Coastal Wetland Buffer areas shall comply with the Wetlands Development Standards and Wetlands Buffer Area Development Standards of the Coastal Land Use and Development Guide.
- ** N **** Filling of wetlands outside the Coastal Zone shall be permitted where feasible mitigation measures have been met and pursuant to City Policy of no net loss of wetland values.
- ** O **** Diking, filling, or dredging of Bay waters, Coastal Wetlands, and estuaries in the Coastal Zone shall be permitted where feasible mitigation measures have been provided to minimize adverse environmental effects, for the following limited uses:

- (a) For incidental public service purposes including, but not limited to, burying cables and pipes, and maintenance of existing dikes and public facilities;
- (b) To maintain a channel adequate to serve the boat ramp at current levels of use;
- (c) Resource restoration purposes;
- (d) Nature study, aquaculture, or similar resource dependent activities;
- (e) Agriculture within existing farmed wetlands but not including the expansion thereof.

- ** P ** The City shall not permit disposal of dredge spoils on existing wetlands unless such disposal is necessary for a resource restoration project or the maintenance of existing agricultural operations in farmed wetlands. Fill will be allowed for aquaculture projects if it can be shown that it is necessary for the project and is required to be located within the wetland and there is no other feasible less environmentally damaging alternative.
- ** Q ** Where wetlands are seasonally farmed, continued agricultural use of the wetlands is allowed under conditions stated in the Agriculture portion of this chapter.
- ** R ** The City shall designate the area encompassed by the Arcata Marsh and Wildlife Sanctuary as Natural Resources Protection, and identify the recreational component of the project as a passive use recreational area.
- ** S ** The City shall encourage the continued use of wetlands for scientific and educational studies and for passive recreation.
- ** T ** The City shall seek funding to establish interpretive sites along the Arcata Bay shore including a Nature Center and Wildlife Care Center to serve as an educational focal point for Arcata's natural resource areas.
- ** U ** The City shall seek funding to establish a system of foot trails and interpretive sites along the Arcata Bay shore subject to the following guidelines:
- (a) All planning and development in the area that is both south of Samoa Boulevard and west of Highway 101 and

which is identified as wetlands or riparian corridor on the adopted Wetlands Map shall be subjected to review by the Marsh and Wildlife Sanctuary Task Force for consistency with the goals and management of the Marsh and Wildlife Sanctuary.

- (b) Development in the area bounded by Butcher's Slough and Gannon Slough should occur in conjunction with development of the National Wildlife Refuge and the Arcata Marsh and Wildlife Sanctuary.

**** V **** The City shall restrict development of the Corporation Yard facilities to its existing boundaries, and shall maintain a landscaped screen along the northern and eastern perimeter of the oxidation pond.

Streams

**** W **** Flood Control, Drainage:

- (a) The City shall encourage the expansion of Janes Creek Flood Control District to include the watersheds of Janes, Jolly Giant, Grotzman, Campbell, and Beith Creeks, or shall otherwise coordinate with the County to alleviate existing flooding problems.
- (b) The newly formed district or designated agency shall evaluate alternate flood control measures and select a flood control plan that improves drainage and minimizes potential hazards.
- (c) In evaluating alternates, emphasis shall be placed on improvement of drainage. However, enlarging of existing tidegates, dredging of presently undredged sections of creek, or construction of new structures shall be allowed only when no less environmentally damaging alternate is feasible, only when adequate mitigation is provided, and only when not located within a wetland. If mitigation for said development is provided in the form of a fully approved restoration project such development may be permitted in a wetland.

**** X **** The City shall develop a comprehensive stream management plan for Arcata's streams. The plan shall address the issues, to include but not be limited to:

- flood control
- riparian buffer areas
- priorities for restoration
- standards for new development along streams

- standards for already developed areas along streams
- public education
- pollution identification and control
- streambank erosion
- fisheries.

The Stream Management Plan will address standards for setbacks from streams with reference to the creek "transition line" or top of bank, as an alternative to a set distance from the centerline of the creek, wherever possible.

**** Y **** The City shall add a new section, Riparian Buffer Areas, to Article 4 of the City's Land Use and Development Guide. This new section will implement the standards and policies affecting development as developed by the Stream Management Plan.

**** Z **** Until the City adopts a Stream Management Plan and specific standards, new development and redevelopments shall maintain or restore a natural vegetation buffer strip along all designated streams subject to the following standards:

- * **Jacoby Creek** - 100 feet from the outer edge of the existing riparian corridor along length of Jacoby Creek. Existing riparian corridor includes those areas adjacent to the creek that are presently dominated by trees and other vegetation characteristic of streamside vegetation.
- * **Channeled Creeks** - at least 25 feet from the transition line of the creek or top of bank: all of Grotzman Creek, lower Beith Creek, all of Campbell Creek, and Jolly Giant Creek above Butcher's Slough, and Janes Creek above McDaniel Slough;
- * **Sloughs** - at least 25 feet from the outer edge of the slough area, McDaniel Slough, Gannon Slough, and Butcher Slough.
- * Indigenous vegetation shall be retained in the buffer areas.
- * Fencing that crosses a stream channel, that acts as a barrier to anadromous fish, or acts as a collector for debris shall not be permitted.
- * Where opportunities arise, the City shall require fencing along channels for new development in general, and to prevent bank erosion by livestock.

- * The City should purchase an easement over the setback area if public access is to be provided.

For the purpose of this implementation measure, "transition line" and "riparian vegetation" are defined as follows:

transition line: that line closest to a stream where riparian vegetation is permanently established.

riparian vegetation: vegetation commonly occurring on stream banks, including but not limited to alder, willow, Wax Myrtle, Big Leaf Maple, California Laurel, Red Elderberry.

- ** AA ** The City shall seek funding to provide for restoration of degraded stream resource including, but not limited to:
 - (a) Jolly Giant Creek from Butcher's Slough north to Highway 101.
 - (b) Janes Creek between 11th Street and Highway 101.
 - (c) Sunset Creek (portion of Janes Creek near Sunset School.
 - (d) Janes Creek between West End Road and vicinity of Ericson Way.
 - (e) Campbell Creek, from Samoa Boulevard to 7th Street, in conjunction with the Arcata Community Park development.
 - (f) Beith and Grotzman Creeks including but not limited to east of Highway 101 and west of Old Arcata Road.
 - (g) Fickle Hill Creek.
 - (h) Campbell Creek from Samoa Boulevard to Gannon Slough.
 - (i) Gannon Slough

Air Quality

- ** AB ** The City shall develop measures to control air pollution sources within the City of Arcata. Those sources may include but not be limited to woodstoves and open burning of household and yard wastes.

Views and Vistas

See Implementation Measures D and M of Chapter I. Urban Development and Community Design

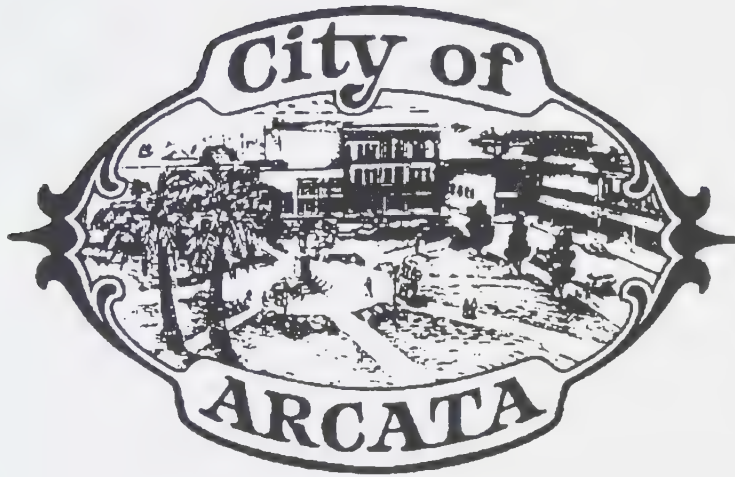
**** ENERGY AND FOOD PRODUCTION ****

[No specific implementation measures for energy and food production]

**** SOLID WASTE MANAGEMENT ****

[The "General Plan Waste Management Element and Solid Waste Task Force Final Report," adopted per Policy 23 by reference, includes implementation measures]

Parks And Recreation Element
of the
Arcata General Plan



Adopted 11/16/94
by Resolution 945-26 of the Arcata City Council

INTRODUCTION

This is the Parks and Recreation Plan for the City of Arcata. As an Element of the City's General Plan it is the central policy document for parks and recreation in Arcata.

The Parks and Recreation Element is organized in a way which addresses the wide range of topics that it covers. Some readers may be interested in the specific development plan for one park, while others might be more concerned about the City's policies for parks or recreation in general. The Element has been divided into four parts.

The first is the introduction which you are now reading. The second contains the Goals, Policies, and Implementation Measures for the Element. The third (Appendix A) is the Technical Report, which includes specific development for each of the established City parks and development standards for new improvements. Finally, Appendix B contains relevant environmental information about the park system, and is the basis for the Negative Declaration adopted for this Plan.

BACKGROUND

Arcata has a long and successful history as a provider of recreational facilities and services. The previous Parks and Recreation Master Plan was adopted in the late 1970's and is now in need of the major update provided by this document. The new Parks and Recreation Element will replace the older document. It should be noted, however, that the many of the details of the older Master Plan have been incorporated into the new Element. These have included park improvement plans and environmental considerations.

One of the things which has changed through the years is the City's perspective on outward growth and development. The City is now in the process of reviewing both its planning area and its sphere of influence. It is no longer seen as appropriate or necessary for Arcata to be planning for the needs of the community of Manila and other outlying areas. These changes will be reflected throughout the General Plan.

SETTING

Arcata is located in a naturally beautiful coastal setting, in California's "Redwood Country." It lies approximately 290 miles north of San Francisco and 80 miles south of the Oregon border. Prominent local features include Arcata Bay (the northern portion of Humboldt Bay), Fickle Hill (a redwood covered mountain on Arcata's east side), Humboldt State University (with the smallest enrollment of any school in the California State University system), and a wide expanse of agricultural open space to the south and west of town.

The setting provides a variety of natural recreational opportunities, including fishing, hiking, bicycling, walking, birding, etc.

APPLICABILITY

The Parks and Recreation Element applies to a wide variety of programs which affect recreation. This can include everything from budget preparation to park improvements; from park acquisition to program scheduling.

Arcata's unique rural environment provides recreational opportunities that would not exist in most small cities. Its forested backdrop and surrounding agricultural lands add to its aesthetics and liveability. If Arcata were surrounded by an urban environment, local recreational needs and opportunities would both be substantially different than they are.

In order to be a comprehensive planning document, the Parks and Recreation Element must address all of the different aspects of local recreational needs, opportunities, and constraints. This includes some things which are beyond the purview of the City's Parks and Recreation Commission. For instance, such passive recreation areas as the Community Forest and the Arcata Marsh and Wildlife Sanctuary are obviously valuable recreation resources but they are not "parks." In such areas the Parks and Recreation Commission will continue to provide advice and recommendations but other City Commissions have more direct responsibility, working with the City's Environmental Services Department.

References to the Community Forest, beach access, hiking trails, creekside linear parks, and other open space areas are included in the Master Plan because of their obvious recreation importance. Primary responsibilities for these areas do not rest with the Parks and Recreation Commission or the parks and recreation divisions of the City.

The following chart has been prepared in order to clarify these areas of responsibility:

1. Developed park and playground areas and recreation buildings (including areas designated for future park improvement):

Primary advisory role:	Parks and Recreation Commission
Primary staff role:	Public Works Department

2. City owned forests and forested open space areas:

Primary advisory role:	Forest Advisory Committee
Primary staff role:	Environmental Services Department

3. Wetlands and creek zones (as defined in the City's Creeks Management Plan):

Primary advisory role:	Creeks and Wetlands Advisory Committee
Primary staff role:	Environmental Services Department.

A committee or commission which has primary advisory responsibility will seek the advice of other committees, commissions, or individuals where their expertise is needed. It is not uncommon for a City park to have creek zones, forests or wetlands within the park boundary. The primary responsibilities listed above will change at the boundary of the creek zone, wetland, or forested area.

For example, the Creeks and Wetlands Advisory Committee has primary advisory responsibility for the portions of Shay Park which have been designated as creek zone or wetland. For the remainder of the parks, however, the Parks and Recreation Commission has primary advisory responsibility and the Creeks and Wetlands Advisory Committee has only secondary responsibility - becoming an advisory committee to the Parks and Recreation Commission.

ACQUISITION AND DEVELOPMENT OF PARKS AND RECREATIONAL FACILITIES

As Arcata's population grows and changes the City must frequently re-evaluate its recreational facilities and services. Such things as nationally accepted standards can serve as a basis for discussion, but the Arcata City Council, responding to the recommendations of the Parks and Recreation Commission, must make its own determinations with the budget for each fiscal year.

It should be noted that such things as the trails at the Arcata Marsh and Wildlife Sanctuary, school playgrounds, and the availability of private recreational facilities might change the City's priorities for additional parks or facilities at certain locations. All of these things must be included in the calculations when committing the City's limited financial resources for the acquisition or development of facilities.

Arcata has had an ordinance in effect for a number of years which requires the developers of residential projects to either provide parks or pay fees in lieu of providing parks. The Parks and Recreation Element helps to guide the Planning Commission and City Council in determining where and what types of park dedications are to be required.

HISTORY

The history of interest in parks and recreation in Arcata goes back to the City's origins. In April, 1850, the City Plaza was set aside as an open space area in the middle of town. Although it was not until many years later that cows were banned from the Plaza, it has played a major role in the City's history as a recreational feature.

The City Ball Park, just one block east of the Plaza, was partially donated to the City in 1923. It has served as the home of the Humboldt Crabs semi-professional baseball team for many years and also provides a well manicured playing field for numerous softball and baseball teams.

Unique to Arcata are two City-owned redwood forests, each nearly a square mile in area. Managed on a true multiple use basis, at least twenty per cent of the proceeds of logging these forests are used to fund park improvements throughout the community. Arcata's Redwood Park, a 26 acre portion of one of the forests, includes a lodge, playground, and picnic areas.

The Community Park and Sports Complex, east of Highway 101 and north of Samoa Boulevard, is another significant recreational area. With fully improved softball and soccer fields, as well as a highly successful private gym (HealthSPORT), the Community Park and Sports Complex is still evolving. It will eventually include a complete community center with facilities for people of all ages.

Numerous small parks and tot lots exist at different locations throughout the community. Many of these have been acquired from developers as the City grew, especially in the 1960's and 70's. More information on the locations of those parks can be found in Appendix A.

PARKS AND RECREATION ELEMENT
ARCATA GENERAL PLAN
Draft
GOALS AND POLICIES
1994

GOALS

- I. TO PROVIDE A WIDE SPECTRUM OF RECREATIONAL OPPORTUNITIES FOR ARCATA RESIDENTS OF ALL AGES.
- II. TO PROVIDE ALL RESIDENTS WITH A WIDE ASSORTMENT OF PARKS AND RELATED FACILITIES.
- III. TO PROMOTE SHARING OF FACILITIES AND PROGRAMS WITH OTHER ENTITIES.
- IV. TO EMPHASIZE FISCAL EFFICIENCY IN THE PROVISION OF PARKS AND RECREATION PROGRAMS.
- V. TO PROVIDE AESTHETICALLY PLEASING PARKS AND RECREATIONAL FACILITIES WHICH ARE COMPATIBLE WITH THEIR ENVIRONMENT.
- VI. TO BRING PARK AND RECREATION FACILITIES INTO COMPLIANCE WITH CHANGING FEDERAL AND STATE LAWS AND ENCOURAGE USER SAFETY.

GOAL I. TO PROVIDE A WIDE SPECTRUM OF RECREATIONAL OPPORTUNITIES FOR ARCATA RESIDENTS OF ALL AGES.

POLICY. The City of Arcata shall annually review and establish standards and objectives and evaluate and address deficiencies. Evaluate new program ideas and incorporate if appropriate.

IMPLEMENTATION MEASURES.

1. Prior to budget development, determine the desired level of recreation programs.
2. Analyze the City's annual recreational report and use recommendations from staff supervisors.
3. Study non-City (private and other public) recreational programs and how they affect the City's programs.

4. Address the feasibility of new program ideas from all sources.

GOAL II. TO PROVIDE ALL RESIDENTS WITH A WIDE ASSORTMENT OF PARKS AND RELATED FACILITIES.

POLICY A. The City of Arcata shall continue to develop and improve the City's parks and related facilities.

IMPLEMENTATION MEASURES.

1. Annually prioritize which parks will be improved or developed, based on neighborhood needs, in accordance with Goal VI of this Plan. The priority schedule will be subject to budgetary constraints and access to other financial resources.
2. Conduct neighborhood surveys every three years to assess recreation needs.
3. Encourage adequate pedestrian, bicycle, and bus transportation to all recreational facilities and programs. Provide adequate parking and bicycle facilities for the intended use.
4. In selecting names for park and recreation facilities, consider names important to local native peoples or historical figures.

POLICY B. The City of Arcata shall encourage the development of privately operated recreation facilities within the City limits and sphere of influence.

IMPLEMENTATION MEASURE.

1. The City may enter into public/private partnerships with the providers of private recreation programs or facilities.

POLICY C. The City of Arcata shall acquire additional parklands as needed to accommodate population growth.

Fees and or parkland dedications pursuant to the Quimby Act (California Government Code Section 66477, as amended) shall be used to provide or improve park and recreation facilities which serve the residents of the subdivision from which such fees or land are obtained. Community Parks serve all residents of the City of Arcata.

Whenever a Neighborhood Park exists, residents of a particular subdivision located in that neighborhood may be considered served by the existing Neighborhood Park. The term "neighborhood" is intended to be applied to the area from which residents can reasonably be expected to travel to use a park or facility. It is not intended to be applied in a strict manner, such as identifying the residents on one side of a street as being in one neighborhood, and the residents on the other side in a different neighborhood.

IMPLEMENTATION MEASURES

1. Parkland acquisition shall be based on the following guidelines:
 - a. At least 80% of each site should be flat (i.e., slopes not exceeding 5%). The remainder should not exceed 25% slope.
 - b. Land must be usable for the intended recreational purpose. This includes adequate size, shape, topography, and all other relevant conditions.
 - c. Sites must be free of hazardous or toxic contamination.
 - d. Land should not require an unusual amount of manual maintenance.
 - e. Sites adjacent to schools should be acquired, if possible.
 - f. The minimum acceptable size is 1/2 acre (total lot).
 - g. Riparian corridors, wetlands, and other undevelopable open spaces will not be acquired for park purposes unless there is some special reason to do so. Where such lands are accepted, development of parklands should minimize wildlife effects by recognizing existing values and avoiding the disturbance of riparian, wetland, and other wildlife habitats wherever possible.
 - h. Land and facilities for public or private recreational community gardening should be considered if the neighborhood in which such site is to be located includes a significant number of dwelling units having minimal open space area for conducting gardening

activities, and where significant interest is expressed that such a facility is needed. "Recreational community gardening" shall mean cultivation of plant material, not for sale, by persons other than, or in addition to, the owner of such land.

- i. Park sites and facilities shall be located so as to reasonably serve the residents of the subdivision from which the land or fees are obtained; and shall reasonably relate to the needs of the inhabitants of the subject subdivision, pursuant to GOAL IV, POLICY B.
 - j. Park sites should have access to at least one existing or proposed public street. This requirement could be waived if the public street is unnecessary for the use or maintenance of the park.
2. Parks are currently needed in the following areas:
 - a. East of Highway 101, north of HSU.
 - b. Near the intersection of Spear Avenue and St. Louis Road.
 - c. South of Samoa Boulevard.
 - d. South of Eleventh Street, near Villa Way.
 - f. In Bayside, near the post office.
3. Additional parks will be needed in the following areas as new residential development occurs:
 - a. Simpson Mill Site, Arcata bottoms.
 - b. Jacoby Creek area.
 - c. North of Bottom Road (Foster Avenue near Janes Creek)
4. Acquire other sites if needed because of changing growth patterns, available funding, or unique opportunities, or statutory requirements.

GOAL III. TO PROMOTE SHARING OF FACILITIES AND PROGRAMS WITH OTHER ENTITIES.

POLICY A. The City of Arcata shall encourage cooperative agreements, maintain good relations, and continue sharing equipment, facilities, fields, maintenance, and staff with other entities.

IMPLEMENTATION MEASURES.

1. Conduct periodic meetings with cooperating entities.
2. Exchange maintenance, equipment, and staff with other entities on an as-needed basis.
3. Inter-group recreational programming and development will be a priority

POLICY B. The City of Arcata shall acquire and develop future park sites adjacent to schools wherever possible.

IMPLEMENTATION MEASURE.

If possible, the City will work with local school districts in the acquisition of properties.

GOAL IV. TO EMPHASIZE FISCAL EFFICIENCY IN THE PROVISION OF PARKS AND RECREATION PROGRAMS.

POLICY A. The City of Arcata shall develop and improve parks and related facilities as funds become available.

IMPLEMENTATION MEASURES

1. Continue to seek grants from a variety of sources.
2. Continue to use at least 20% of net forest revenues for park development, maintenance, and acquisition.
3. Give priority to self-financing programs such as "adopt-a-park."
4. Where user fees are to be charged, fees will reflect the cost of maintenance, staffing, and residential status and shall be available, upon request, from the City Clerk.
5. For all residential subdivisions, continue to accept parkland dedications, or fees in lieu of dedication, according to the following standards:

- a. Land or fees shall be based on five (5) acres of parkland per 1,000 persons and in accordance with state statute (the Quimby Act; California Government Code Section 66477, as amended).
 - b. Subdivisions having fifty-one or more lots shall automatically be reviewed by the Parks and Recreation Commission for possible dedications. Any other subdivision, having five or more lots, and that proposes to dedicate land in lieu of paying the fee, shall also be reviewed by the Parks and Recreation Commission for possible dedications.
 - c. Land accepted for dedication shall meet the guidelines specified under GOAL II, above.
 - d. Riparian areas, wetlands, and forests shall be accepted for dedication only if it has been determined that the recreational needs of the area will be adequately met by other sites. Where such lands are accepted, development of parklands should minimize wildlife effects by recognizing existing values and avoiding the disturbance of riparian, wetland, and other wildlife habitats wherever possible.
6. The City of Arcata shall maintain a five-year schedule that specifies the disposition of fees and/or land acquired from any given subdivision. Fees will be committed within five years of receipt of fees, or issuance of building permits on one-half of the lots created by the subdivision from which the fees are obtained, whichever occurs later.
 7. Upon dedication of fees, the Parks and Recreation Commission shall add those fees and the subdivision from which the fees are collected, to the schedule specified in (6) above.

POLICY B.

The City shall offer credit for private recreation facilities as specified in California Government Code Section 66477 or where it is determined that proposed private recreation facilities are in the best interest of the citizens of the City of Arcata.

IMPLEMENTATION MEASURES

1. The maximum amount of credit for private recreation facilities (land and improvements) shall be 50% of the land or fees that would normally be dedicated or paid, respectively.
2. To be given credit, improvements to the private park facility, and equipment provided must conform to the **Recommended Development Standards** specified in the Parks and Recreation Element Technical Report.
3. Private recreation facilities given credit shall have the following characteristics:
 - a. The proposed recreation facility should not be located on land needed for a public park or recreation facility.
 - b. The proposed recreation facility shall be within the boundaries of the subdivision and available to all of the residents of the subdivision within which it is located and which it is intended to serve.
 - c. The proposed recreation facility for which credit is being given shall have some improvements. The **Recommended Development Standards** specified in the Parks and Recreation Element Technical Report shall be used as a guide for such improvements.
 - d. The proposed recreation facility should be suitable and usable for recreational activities.
 - e. Provisions shall be made for development, improvements and maintenance of the proposed recreation facility, sufficient for its intended use.
 - f. In the case of subdivisions not required to be given credit pursuant to California Government Code Section 66477; the proposed recreation facility shall be necessary for the security, safety, and well-being of the residents of the subdivision.

GOAL V. TO PROVIDE AESTHETICALLY PLEASING PARKS AND RECREATIONAL FACILITIES WHICH ARE COMPATIBLE WITH THEIR ENVIRONMENT.

POLICY. The City of Arcata shall support a system of recreational services and facilities which minimize adverse impacts on the environmental, fiscal, and social well-being of Arcata.

IMPLEMENTATION MEASURES.

1. Conduct periodic meetings with the Parks and Recreation Commission, Forest Management Advisory Committee, and the Creeks and Wetlands Advisory Committee.
2. Parks will be developed in a manner which minimizes adverse wildlife impacts and enhances wildlife habitat, if possible.
3. Colorful landscaping will be used at the Plaza, City Hall, Ballfield, and the Community Center.

GOAL VI. TO BRING PARK AND RECREATION FACILITIES INTO COMPLIANCE WITH CHANGING FEDERAL AND STATE LAWS AND ENCOURAGE USER SAFETY.

POLICY A. The City of Arcata shall establish priorities to ensure compliance with the requirements of federal and state laws.

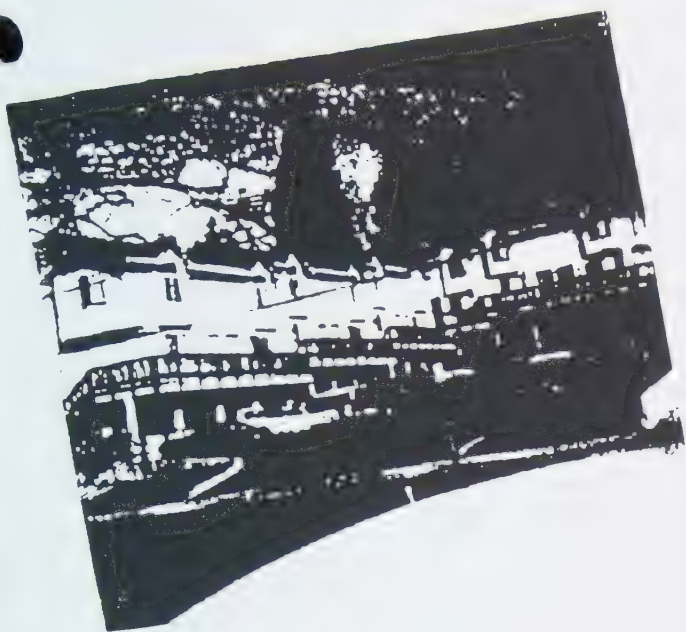
IMPLEMENTATION MEASURE

Assure that compliance with the Americans with Disabilities Act, the Occupational Safety and Health Act, Consumer Safety Commission Guidelines and other state or federal requirements is given top priority in City programs.

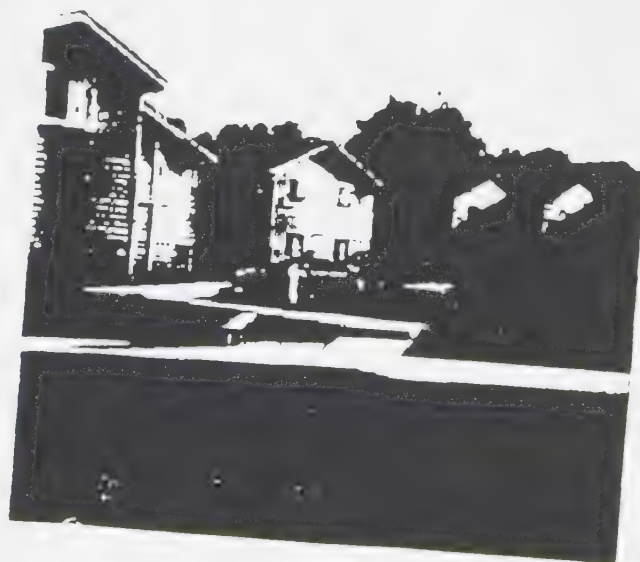
POLICY B. The City of Arcata shall maintain a risk management program for park and recreation programs and facilities.

IMPLEMENTATION MEASURES.

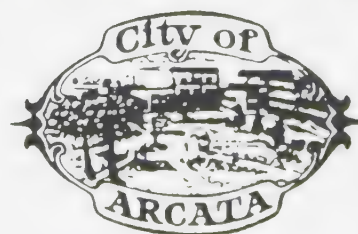
1. Develop a maintenance check schedule for parks and recreation facilities.
2. Encourage user safety.
3. Enact a staff safety awareness and training program.



Housing Element



Adopted: January 6, 1993



HOUSING ELEMENT CONTENTS

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EXECUTIVE SUMMARY
OF THE
1992 HOUSING ELEMENT

The Housing Element and the implementing ordinance changes that will follow mark potentially major changes to local housing policy. They address all of the varied requirements of State Housing Element Law and the housing set-aside requirements of State Redevelopment Law. Within the natural constraints of Arcata's location, this Housing Element provides a variety of planning tools which can be used to address the housing needs of a diverse and growing population.

The new Housing Element contains provisions for inclusionary zoning which will require that every new housing development, regardless of the location or type or development, address the housing needs of moderate, low and very low income people. This is a deliberate effort to meet the needs of the housing disadvantaged without creating isolated pockets for "second class citizens." After considering much public testimony about inclusionary zoning alternatives, the City Council chose to give the local development community three years to provide affordable housing without the strict mandate of inclusionary standards. In taking this step, the City Council clearly specified that housing developers will be expected to assist the City in meeting the Regional Needs percentages of units to be made available to people of very low, low, and moderate incomes over the next three years.

The new Housing Element also gives the City's Planning Commission and City Council a wide variety of other policy alternatives that can be used to expand housing opportunities in general. Changes to approximately thirty sections of the Arcata Land Use and Development Guide (primarily land development and zoning regulations) are expected to follow the adoption of the new Housing Element.

Some communities have made a deliberate effort to exclude people with lower incomes by requiring large minimum lot sizes and by choosing not to adequately provide opportunities for higher density zoning. In Arcata, however, the commitment has been made to expand housing opportunities for all people. It is predictable that some will respond with a "not in my back yard" attitude when faced with the prospect of new housing for low or moderate income persons. It is time to recognize that low and moderate income persons make up the majority of the population and their housing needs cannot legally be ignored.

The challenge will not be one of finding ways to avoid letting these people into our community. The challenge will be to find functional and appropriate ways to expand housing opportunities for all Arcatans.

Why are we doing this Housing Element?

The City's previous Housing Element (the Residential Environment Chapter of the General Plan) was adopted in 1985. It no longer meets the requirements of State law and does not address a variety of local housing issues. Also, increases in housing prices and rent levels, coupled with low vacancy rates since 1985, make housing an even more important issue now than it was in 1985.

State Housing Element Law now requires that each city and county determine local housing needs for: the handicapped; the elderly; large families; female headed households; moderate, low and very low income persons; the homeless, farmworkers; and the general population. Because the City of Arcata has an adopted redevelopment area, the City must also address the housing requirements of State Redevelopment Law (Section 33000 of the Health & Safety Code). The reader will find all of these requirements addressed in the text which follows.

Arcata has a history of success in receiving Community Development Block Grants. They have been used for everything from infrastructure improvements in the City's industrial park to low interest loans for housing rehabilitation. The City cannot continue to receive such grants without keeping its Housing Element up to date.

Another important reason for having an adequate Housing Element is that the City takes a considerable risk by not having one. Virtually all development projects which undergo discretionary review (public hearings) must be evaluated for conformity with General Plan requirements. If a city or county allows any portion of its General Plan to become out of date, it faces a chance of legal challenges that could stop all development until the Plan is updated.

Finally, and most importantly, the City of Arcata needs to study and debate local housing issues on a regular basis. Housing is a critical subject to every Arcatan, although it may be taken for granted by those with adequate, affordable housing. Arcata continues to grow in population. Arcata will continue to change. Decisions about housing will help to shape that change over time.

What is included in the Housing Element?

The Housing Element can be characterized as actually being three different documents. The first is the actual text of the Element itself. The second consists of a Technical Report which includes a variety of data, the City's Homeless Services Plan, and the Environmental Impact Report (EIR) for the Element. The final section will include the changes to the City's Land Use and Development Guide (i.e., zoning and subdivision ordinances) which are necessary to implement the Housing Element.

The process of preparing this Housing Element included a review of all of the other Elements of the Arcata General Plan to avoid the creation of inconsistencies among the different Plan Elements.

HOUSING ELEMENT INTRODUCTION

This is the 1992 Housing Element of the Arcata General Plan. It addresses the housing needs of present and future Arcatans, with particular recognition of the rising costs of housing and a diminishing supply of developable property in our community.

As we look at Arcata's housing situation, it is time to recognize that the people who need housing assistance of one kind or another are no longer some isolated minority. The people who can no longer afford to buy a home without assistance include school teachers, factory workers, loggers, mechanics, and business owners. Regular folks with all kinds of backgrounds and interests are now paying as much as half of their incomes for rent. They have no way to save up the "nest egg" for a down payment on a house.

The State now estimates that one-fourth of all Arcatans are living below the poverty level. More than one-half of Arcata renters, and almost 40% of all Arcata households, are paying more than thirty percent of their total incomes for housing costs. Vacancy rates remain very low and Arcata appears to be growing in popularity for people from outside the area who are seeking "income properties." Young families have few local options as they attempt to compete with college students who can pool their limited resources to rent houses. Almost no apartment units for families have been built in recent years.

Arcata and Humboldt County populations continue to grow at a relatively slow pace. Meanwhile, the State's population has increased by more than 2,000 people per day. The north coast of California cannot remain unaffected by the booming population in the rest of the State. More and more people will look to this area as they attempt to escape the problems of more urban communities. These people compete with local residents for limited housing and they often arrive with a substantial equity from the sale of a home in a more urban area (where housing prices may be double or triple Arcata's prices for comparable properties).

Planning for housing is not easy. There are no simple answers that will solve all of the local housing problems. Arcata must do its part and insist that Humboldt State University, surrounding cities, Humboldt County, the State of California, the federal government and the private sector all do their parts as well.

What is a Housing Element?

The Housing Element is one of several General Plan elements mandated by State law. Every city and county in California is required to adopt and periodically update these Plan elements.

The form of the Housing Element is largely dictated by State law (Government Code Section 65583). The implementation of the Element is primarily a local matter. The State requires the City to adequately address a variety of housing issues. The way in which they are addressed is left up to the City. The State's Department of Housing and Community Development (HCD) reviewed the Housing Element in Draft form and provided written comments to the City before final public hearings were conducted.

How did the public get involved in the process?

In the earlier stages of work on the Draft Housing Element, the City Council appointed a Housing Element Technical Task Force to make recommendations for revisions to the Element. The members of this group all had technical expertise in the field of housing. They included people with expertise in construction, development, design, finance, and rehabilitation. This group held numerous public meetings in 1990 and 1991 before presenting a list of recommendations to the Planning Commission and City Council. That list of recommendations, although now considerably modified to include more incentives for the development of housing for lower income persons, became the first of several drafts of the Five Year Action Plan now contained in Section XI of the Housing Element.

The public has been involved in the process of preparing this Housing Element and will continue to be involved in its implementation. The Arcata Planning Commission and City Council held several study session meetings where different concepts and strategies were discussed. All of these meetings have been open to the public. It is expected that numerous study sessions and public hearings will yet be held before the adoption of the ordinance changes which will implement the Element. Copies of the Draft Housing Element were readily available at local libraries as well as at City Hall.

City staff conducted numerous informational meetings to inform the public about some of the more technical aspects of the Element. The City's newsletter, which is sent out in water bills, included a story about the Housing Element, encouraging public participation. Several stories appeared in the local press.

The April, 1992, City ballot included a measure seeking voter authorization under Article XXXIV of the State Constitution for the use of public funds in the development of housing for lower income persons. The debate over this measure contributed to the public awareness of housing issues overall. The ballot measure was approved by the voters.

Public hearings on the Housing Element conducted by both the City Council and Planning Commission have been shown over local access cable TV.

REVIEW OF EXISTING HOUSING ELEMENT

The previous Housing Element of the Arcata General Plan was adopted in 1985 and labeled the "Residential Environment" section of the Plan. A review of the 1985 Element reveals a mixed record in terms of the City's housing efforts since that date. Many of the things envisioned in the 1985 Element have been put into place. Some of them have not.

State Housing Element law requires the City to evaluate the effectiveness of the existing Housing Element as part of the process of preparing revisions to that Plan. The following comments have been prepared to meet this requirement.

It is now anticipated that the goals, policies, and implementation measures of the General Plan will be combined into a single document. The Planning Commission and City Council have already begun the review of the overall General Plan with this in mind.

Existing General Plan - Residential Environment Section

Introduction

The Introduction of the 1985 Housing Element adequately stresses the importance of the City's role in local housing issues. The only part of the introduction which now should be reconsidered is the population projection noted in the second paragraph. It indicates that 3,900 new residents were expected in the planning area by the year 2000. That would have meant a total population of roughly 19,000 in the planning area by the year 2000.

It should be noted that the Arcata planning area actually extends some distance beyond the City limits, including a considerable area where the population is difficult to estimate. It now appears that the rate of population growth is somewhat ahead of that 1985 estimate.

A review of building permit records for construction and demolition figures within the City limits since the current Housing Element was adopted shows a net increase of 973 housing units, or an average increase of almost 300 people in 139 new units per year. This means that the City's population increased by approximately 1,875 people in new housing units in the 6.75 years between September, 1985, and July, 1992. Another 50, or so, people were added to the City's population through annexation during that same period. The estimated population within the Arcata City limits as of January, 1993, will be nearly 16,000.

The significance of these numbers is that housing development in Arcata is slightly ahead of the projections of the 1985 Plan. Even with the City's current projection that the rate of population growth will slow as we near the end of this century, the rates of population growth and new housing development remain close to the overall schedule envisioned in 1985.

Policies for Affordability

The 1985 Housing Element contains six policies dealing with affordability. Policies #1 and #6, recognizing the housing needs of lower income persons and

supporting condominium development as well as other ownership options, remain valid statements of City policy.

Policy #2 calls for the use of incentives for developers to provide a variety of units for low and moderate income persons. Although this change was implemented, primarily through a density bonus section in the City's Land Use and Development Guide, none of these units have actually been constructed since 1985. It now appears that greater incentives are needed if such units are to be provided by the private sector.

The needs of first time home buyers were not emphasized in the 1985 Plan. The City is now considering ways to assist first time home buyers, including those of lower incomes. Redevelopment set-aside moneys, or other funding sources will be considered in a program to provide either down payment or monthly payment assistance, or both, to first time home buyers.

Policies #3, #4, and #5 call for the City to take a variety of steps to encourage or assist in the provision of housing for low and moderate income persons. For the most part, these things have not yet happened. The City, through its Community Development (redevelopment) Agency, has sold bonds to finance infrastructure to serve assisted housing areas and to create a reserve of funds—that have been set aside for housing as required by State Redevelopment Law. No housing projects have yet been developed to take advantage of these funds. The City now anticipates several different developments that will utilize redevelopment funds which have been set aside for housing. The first of these developments is expected to be completed some time in 1993.

It should be noted that the City's progress in the use of redevelopment funds for housing was significantly constrained by several years of litigation with Humboldt County which followed the creation of Arcata's Community Development Agency. That litigation was not settled until 1988.

Policies for Energy Efficiency

The 1985 Housing Element contains four policies promoting energy efficiency in housing. These policies have been implemented but additional efforts are now being recommended. The Solar Access provisions of the Land Use and Development Guide currently apply only to major residential subdivisions and planned developments. It is now being recommended that they be expanded to include all other residential developments containing more than one single family dwelling. Energy efficiency will continue to be a major factor in each project review conducted by the City's Design Assistance Committee.

Policies for Housing Rehabilitation

The 1985 Housing Element contains four policies dealing with housing rehabilitation, all of which have been implemented. The City has utilized redevelopment and Community Development Block Grant funds to support a housing rehabilitation loan system since the 1970s. In addition, the City waives permit fees for these rehabilitation projects as a local match to grant funds.

Land Use and Density Controls

The 1985 Housing Element contains six policies dealing with land use and density controls. While all of the six policies have been implemented, there are some additional steps needed to bring about the desired end results. These additional steps are described in greater detail in the "Action Plan" section of the Housing Element.

Public Relations

The 1985 Housing Element contains four policies dealing with public relations, all of which have been implemented.

Fairness in Housing

The 1985 Housing Element contains two policies dealing with fair housing, both of which have been only partially implemented. Policy #25, which calls for spreading "low income housing" throughout the City, is now proposed to be amended slightly, to assure that "not in my back yard" (NIMBY) reactions do not curtail needed housing developments. Policy #26, which calls for the implementation of housing programs for those with special needs, will require a stronger commitment from the City, through the use of redevelopment and grant funds. An additional policy should now be added, noting the City's role in providing information to those who feel that they have been victimized by a violation of Fair Housing Statutes.

General Plan Map

The description of the General Plan Map contained in the 1985 Housing Element includes important information about the planned densities and types of residential development anticipated in different parts of the City. Some changes are now proposed:

1. Rather than specifying a limit on the number of persons per acre, the text should reflect a range of both units and persons per acre that are anticipated in each category. This should make the text more "user-friendly" without significantly changing the intent of the Plan.
2. References to the Central Business District, and other categories which allow housing, need to be added.
3. Language needs to be included specifying that the proposed levels of development are anticipated only after annexation to, and appropriate levels of public services by, the City of Arcata. This could help to avoid misunderstandings with Humboldt County when developers of rural properties attempt to justify their projects based on the City's General Plan Map.
4. The text should specify that developments must meet minimum as well as maximum density requirements in each residential zone.

Implementation

The 1985 Housing Element contains 16 implementation measures which are

intended to support the policies reviewed above. These measures are reviewed individually below:

- A. *Incentives for developers of units for low and moderate income persons.* Although these provisions have been put into effect, they have had minimal effect on the development community. The City is now proposing a combination of additional incentives to assure that a reasonable number of these units are provided.
- B. *Subdivisions required to be reviewed for compliance with Housing Element standards.* This is routinely done by the City. No additional actions are necessary.
- C. *City commitment to pursue funding for various housing assistance programs.* This implementation measure includes a list of programs that the City was going to undertake, with specific results projected over a five year period. The actual results differ somewhat from the projections.

Sixty-four units were projected to receive rehabilitation funding from Community Development Block Grants (CDBG) and California Housing Finance Agency (CHFA) sources. Fifty-nine units were actually rehabilitated during that period, with funding from CDBG and the City's Community Development Agency. No CHFA funds were available for the purpose.

New construction financing programs were projected to generate 42 units in 1986 (Farmers Home Administration - FmHA funding) and 70 units in 1988 (Housing and Urban Development - HUD 202 - senior citizens). Neither of these projects was actually undertaken. After Arcata was originally targeted for an FmHA 515 project, FmHA apparently determined that this City's proximity to the larger population center in Eureka precluded the development. The HUD 202 project did not happen because the developer of the site chose to pursue a market rate project with no financial assistance for low or moderate income seniors. Although discretionary approvals have been granted by the City, that project has still not been constructed.

The 1985 Housing Element also projected that 35 units would remain available through the HUD Section 8 rental subsidy program in each of the five years. In actuality, a single complex of 135 Section 8 assisted units exists in Arcata. Another 90 or so units in Arcata are occupied by individuals receiving Section 8 rental assistance through the County Housing Authority. In those cases, however, the individual units are not protected from conversion to market rate rents after the present renters move out. This has apparently not been a problem in Arcata because the owners of these rental units have generally been willing to continue to rent to people who receive Section 8 assistance.

- D. *Support for the development of limited equity housing cooperatives.* The River Community Homes project, 40 units in cooperative ownership, was completed in 1984. It is relatively unique in that it provides an opportunity for low and moderate income persons to achieve home ownership. Expansion of the existing cooperative, or the construction of more such units at another location, remain viable prospects for the future. It is anticipated that redevelopment set-aside funds will be

used to assist in the development of additional cooperative housing units within the next five years.

- E. Continued commitment to contract with the Arcata Economic Development Corporation (AEDC) for housing programs. While this has been done, it should also be noted that the City may wish to contract with one or more nonprofit providers of housing for lower income persons. The role played by AEDC in the future may change.
- F. City to continue to support energy conservation efforts. The proposed expansion of the Solar Access provisions should be noted.
- G. Review and revise, as necessary, the Uniform Building Code (UBC) and Uniform Housing Code. Conducting annual meetings to review the codes has apparently not happened. The list of review items could now be expanded to include considering a minimum floor area per unit which is below that required by the UBC. The UBC limit recently increased to 220 square feet, excluding kitchen and bathroom areas. Efficiency units as small as 150 square feet should be considered as a way to help to meet the needs of some individuals.
- H. Continue the housing rehabilitation program. The recommended aspects of this program are continuing. The language of Section 3-0106 (b) of the Land Use and Development Guide should be clarified to assure that it implements the provision of the 1985 Housing Element, which exempts from the Residential Construction Tax the creation of new housing units in existing buildings, provided that floor area is not increased.
- I. Review Land Use and Development Guide. This was completed after the 1985 Housing Element and will be undertaken again as a follow-up to this Plan update.
- J. Allow for design flexibility, particularly in the use of open space standards. This is possible through the use of the City's Planned Development review procedures. Some amendments to those procedures are now being proposed to allow for more flexibility in their use.
- K. Limitations on condominium conversions. The City adopted regulations for condominium conversions, including inclusionary requirements for low and moderate income buyers, to implement the 1985 Housing Element. Only minor changes to the applicable Section of the Land Use and Development Guide are now proposed.
- L. Allowance for up to two units per lot in lower density residential zones. This amendment to the LUDG was put into effect, allowing second units subject to setback, open space, and floor area requirements. Only minor amendments to these provisions are now anticipated, and they are intended to encourage the development of additional second units where adequate space and parking are available.
- M. Monitor housing market annually, update Housing Element every five years. The market research has been done every year as part of the State of the City Report. The Housing Element update is now somewhat behind the original schedule.

- N. *Design manuals and General Plan Map.* The General Plan and Zoning Maps have been combined into a single map. The design manuals continue to be updated periodically but more design manuals are needed. A new phase of updates is expected to follow the adoption of the new Housing Element.
- O. *Handicapped access.* New state and federal design standards for handicapped access render most of these proposals somewhat redundant. The City is now aggressively assuring compliance with the new State standards. City staff encourages developers and property owners to research the requirements of the Americans with Disabilities Act of 1990.
- P. *Develop housing project for senior citizens.* This was not undertaken during the period since 1985. However, it remains the primary development proposal for the use of redevelopment funds which have been set aside for housing projects. A somewhat modified form of this project is now anticipated in 1993.

ARCATA'S EXISTING HOUSING PROGRAMS AND STANDARDS

The City of Arcata has already implemented numerous programs and policies to expand housing opportunities. This section of the Housing Element considers some of these previous and on-going efforts in order to best determine a course for future action.

Housing Rehabilitation

Arcata has had programs providing funding for the rehabilitation of housing units for nearly fifteen years. Lower income persons, whether owners or renters, have benefited from these programs. A total of more than 150 housing units have been rehabilitated through these programs.

Operating on a revolving loan basis, money paid back to the program becomes available for future loans to other people. Because of the slow process of loan payback, additional funding will be needed to make the current program completely self-supporting. Many local housing units would remain in need of repairs if it were not for the availability of rehabilitation loans through this program.

Housing in the City's Redevelopment Area

Although there has been considerable housing development within the City's redevelopment area, almost none of these units have been reserved for occupancy by people of low or moderate incomes. In order to meet the requirements of State Redevelopment Law, the City will have to assure that new housing units, and those which are substantially rehabilitated, within the redevelopment area meet the following quotas:

- a. At least 15% for low and moderate income households;
- b. At least 40% of the 15% (or 6% of the total) must be for very low income households.

Housing set aside funds generated by the tax increment system of the City's Community Development Agency now total approximately \$700,000, with anticipated increases of approximately \$90,000 per year. The Agency has now adopted a plan for the development of housing which will use these funds as "seed money" to lead to outside investment in local housing for lower income persons. It has been noted that \$700,000 on its own would not create much additional housing. As seed money, it may be sufficient to leverage considerable investment by other parties.

The City may have lost some opportunities for needed housing by not previously having a system in place to require housing developers to reserve a percentage of units for households with lower incomes. This will be rectified in the future, however, with the implementation of this Housing Element.

The Housing Strategy for the use of the set-aside funds of the Arcata Community Development Agency was adopted by the Agency Board in November, 1992. The Strategy includes a commitment that 20% of the funds will be used for median income households with the remainder to be divided between low and

very low income households. The Strategy provides for considerable flexibility in terms of the specific use of set-aside funds with all of the following listed as possible uses:

- * First-time homebuyer program;
- * Mixed income condo/coop project;
- * Self-help or sweat equity program;
- * Rental housing for large families or disabled;
- * Senior housing;
- * Land banking;
- * Deferred payment loans for housing rehab or to avert homelessness.

Mobile Homes - Manufactured Housing

The City of Arcata allows the placement of manufactured housing units (mobile homes) on any lot where a conventional single family dwelling is allowed. No special design criteria are specified. As with conventional dwelling units, manufactured homes placed on individual lots must go on permanent foundations. The only additional criterion is that they must meet the certification standards of either the State of California or the federal Department of Housing and Urban Development.

The City allows the development of mobile home parks in most residential zones without requiring a lengthy review process. The minimal availability of vacant, residentially zoned property appears to be the only significant constraint to the development of additional mobile home parks in Arcata.

Second Units - "Mother-in-law Units"

Arcata allows the construction of second units in all areas where single family dwellings are permitted. No discretionary review process is required for second units, although they do undergo design review, primarily to assure that they conform to the design of the primary unit on the property.

The only limitation placed on second units in residential zones is that, when construction is completed, one of the units must have at least twice the square footage of the other. In almost all cases this means that small second units are added to existing homes which have at least twice their square footage. In rare cases, however, owners of existing homes choose to build second units which have twice the square footage of the existing unit. Second unit developments are required to meet open space and setback requirements.

A problem associated with Arcata's liberal treatment of second units has resulted from the City's current parking standards. The current standards require no off-street parking for the addition of a second unit when the total floor area of the two units on a lot will be less than 1800 square feet. This standard is now proposed to be changed to require adequate off-street parking.

Floor Area Ratios

The City does not currently specify the maximum number of units per lot permitted in R-M, R-MH, or R-H zones. Instead, the City has used a combination of height restrictions, open space requirements, parking requirements and floor area ratios to determine the number of units permitted on any given multi-family lot. This approach has led to a situation where there is no incentive for developers to provide larger units which are suitable for family occupancy.

The current approach has helped to provide housing opportunities for students near the University. Many small studio and one-bedroom units have been constructed, with minimal off-street parking. Such units meet the needs of students, many of whom do not have cars, but are often not suited to the needs of families.

The City is now proposing a two-tiered system where the multi-family zones near the University will continue with the same approach, encouraging the development of small "efficiency units." Multi-family zones away from the University will be subject to standards which include parking requirements specified on a per unit basis, maximum numbers of units per acre, and floor area ratio limitations based on the number of bedrooms. This system is intended to encourage the construction of more units for use by families at locations away from the University.

Parking Requirements

Arcata's present requirements for off-street parking are somewhat unusual. Instead of specifying a minimum number of parking spaces per residential unit, they require one parking space for every 600 square feet of residential floor area (in most zones). Parking space requirements are always rounded down to the last whole number, so a residential unit of 1,199 square feet could require only one space. In no case are more than two parking spaces required for a residential unit, regardless of the size of the unit.

The current parking standards also specify that additions to existing structures or uses will require only the amount of parking required to serve the addition, even if the existing use or structure does not meet parking requirements. This can create situations where a second unit of less than 600 square feet can be added to an existing home with no off-street parking available for either unit.

In terms of housing impacts, the most important aspect of the current parking standards is that they work in conjunction with the existing Floor Area Ratio standards of the multi-family zones to encourage the construction of small studio and one-bedroom units. They effectively discourage the construction of three or four bedroom units. As noted above, under "Floor Area Ratios," the City is now proposing to change the parking requirements to facilitate the construction of larger units away from the University and to prevent future problems resulting from a lack of off-street parking.

Planned Development Overlay Zoning

The City of Arcata allows for creative variations on conventional zoning

requirements through the use of Planned Development Overlay Zoning. Developers wishing to undertake a housing project which differs from normal requirements for density, building height, setback, etc., can propose alternative designs, if the subject property has been zoned with the "PD" overlay designation. PD overlays can be combined with any base zoning.

The PD approach is used to allow developers to make trade-offs which are specifically approved by the Planning Commission. For instance, one developer provided more parking spaces than would ordinarily be required and designated a portion of his property as permanent open space in exchange for higher density than the base zoning would ordinarily have allowed. In another case a developer preserved all of the open space along a wetland in exchange for creating smaller residential lots in another part of the development.

Having this option has proven to be beneficial to the community and to those developers attempting creative projects. The City is now proposing changes to the zoning standards to expand the use of the Planned Development approach.

Zero Lot Line Option Agreements

The City of Arcata regards building setbacks along interior lot lines (places where two lots adjoin) as primarily an issue between the neighboring property owners. In Arcata, if two neighbors agree that one of them should be allowed to build something within the normal setback area between their properties, the City has a system to allow for such construction. In most communities such construction could only occur if a Variance was first approved.

The use of Zero Lot Line Option Agreements has resulted in the construction of numerous housing units that otherwise would never have been built because of setback requirements.

Homeless Shelter Acquisition

Most small cities would regard the development of a homeless shelter as a county responsibility because of the social welfare role of counties. Arcata has chosen to augment the efforts of Humboldt County, however, and has sought grant funding to provide a small shelter in Arcata. The Redwood Community Action Agency (RCAA) has been the "sponsor" of the local efforts. RCAA has now received grant funding for the acquisition and rehabilitation of an existing three bedroom house in Arcata to accommodate up to six homeless persons at a time. This property was purchased and "Arcata House" is now in operation. It is consistently occupied and has a long waiting list.

The City prepared a Homeless Services Plan which is a part of the Technical Report for the Housing Element.

It should also be noted that hostels, group quarters, and the use of residential units to shelter six or fewer persons are all permitted at a variety of locations in the City. This means that facilities to house the homeless can be provided by public or private entities without undergoing a public hearing process. Minor changes to the City's zoning standards are now being proposed to further expand the potential means of meeting the needs of the homeless.

Density Bonus System

The City of Arcata has, for some years, allowed density bonuses for housing developments which provide units for low and moderate income people. The primary incentive has been an increase in the floor area ratio allowed in R-M, R-MH, and R-H zones. Unfortunately, the incentives have not been sufficient to cause developers to provide the needed housing units for low and moderate income people. Instead, developers have chosen to forego the incentives and provide units only at market rates.

In order to encourage the provision of housing units at rent levels and sales prices which are below market rates, the City is now proposing to increase the incentives offered while also requiring the inclusion of housing for people with lower incomes, or the payment of fees in lieu thereof, in all new residential developments.

Commitment to In-Fill Development

In completing the update of the Open Space and Conservation Elements of Arcata's General Plan in 1989, the City restated its commitment to the preservation of agricultural lands in and around Arcata. Along with this decision went a commitment to allow for more in-filling of properties within the developed portions of the community.

This commitment has played a major part in the drafting of the proposed Housing Element and the implementation measures contained in the proposed amendments to the City's Land Use and Development Guide. It contains provisions to allow for more housing at more locations throughout the community.

Residential Development in Commercial Areas

The City of Arcata allows for residential development, by use permit, in General Commercial zones and encourages residential development in the downtown commercial area. In fact, the highest densities of residential development, other than those on the University campus, are likely to occur in the Central Business District.

The once-popular notion that each different kind of land use should be separated from each other use is no longer automatically accepted. The City has recognized that by combining residential and commercial uses it can add vitality and diversity to the area. This is one of the reasons why Arcata's downtown has not undergone the kind of economic slump that has occurred in the downtowns of many other communities.

The City recently amended the standards of the Industrial-Commercial zone to allow for residential development where specific findings are made to assure that conflicts between residential and business activities of the zone are minimized. A similar amendment is now proposed for language of the General Commercial (GC) zone.

State of the City Report

Every spring a new group of Humboldt State University students, working with

staff members of the City's Community Development Department, write a report covering a wide range of issues affecting Arcata. The report, usually some 100 pages in length, includes a variety of information on housing cost, vacancy rates, demographics, employment trends, and other data which is relevant to housing.

Information from the 1991 "State of the City Report" has been quoted frequently throughout the new Housing Element.

EXISTING ASSISTED HOUSING UNITS AT RISK OF CONVERSION TO MARKET RATES

State Housing Element Law (Section 65583 of the Government Code) requires each city and county to analyze the status of existing housing units which, through the availability of subsidies, are provided to moderate, low or very low income households at below market rates. The purpose of the analysis is to determine whether such units are at risk of being converted to market rates within the next ten years and, if so, to prepare a plan to deal with this reduction in the number of assisted housing units.

The analysis conducted in the preparation of this Housing Element has focused on two kinds of assisted units. These are:

1. Specific housing developments (i.e., Humboldt Plaza Apartments and River Community Homes);
2. Scattered individual units (i.e., those receiving HUD Section 8 rental assistance and those which have been rehabilitated with either CDBG or redevelopment funds).

Specific Housing Developments.

The most significant group of assisted housing units in Arcata is Humboldt Plaza Apartments. Located on Alliance Road, in the northwest part of the City, Humboldt Plaza consists of 135 units, including one through four bedroom designs. Built approximately twenty years ago with funding from the Federal Housing Administration (FHA) Section 221 (D) (3) program, Humboldt Plaza now provides rental assistance to families through the HUD Section 8 program. The Section 8 program allows the tenants to pay rent equal to 30% of their adjusted income, with the remainder provided by HUD.

Humboldt Plaza is not considered to be at risk of conversion to market rates for the following reasons:

- a. It is owned by a non-profit corporation which is in the business of providing subsidized housing;
- b. Only about half of the forty year mortgage has been retired and there is an FHA restriction on prepayment (this essentially assures that it cannot convert to market rates for at least twenty years);
- c. HUD Section 8 funding is offered in five-year increments. Humboldt Plaza just renewed its option for such funding in April, 1990. Even when the mortgage is retired, the pattern of five-year increments is likely to assure the tenants and the City that ample time will be available to address the potential conversion.

River Community Homes is a limited equity housing cooperative of forty units, located on Hallen Drive in the Valley West neighborhood. Funded originally with a combination of Community Development Block Grant (CDBG) and California

Housing Finance Association dollars, River Community Homes has been structured to assure that the sales price of the units will remain within the reach of lower income households, at least until the end of the thirty year mortgage period. That period extends until approximately the year 2010 and is not within the time frame that must be addressed in this Housing Element. The mortgages are written to prevent early prepayment and conversion to market rates.

Because the title to River Community Homes is vested with a cooperative, with all of its members being lower income (HUD Section 8 recipient) households, there is not the motivation to convert these units to market rates that there would be if the title were held by a for-profit organization.

Individual Units

The Humboldt County Housing Authority estimates that there are approximately 90 individual households in the Arcata area receiving HUD Section 8 assistance. Because this assistance is earmarked for the renters, rather than to the housing units, it cannot be categorized in the same way as units which are at risk of conversion. The owners of units which presently contain renters receiving Section 8 assistance may elect to rent the units in the future to people who do not receive such assistance. Such a decision on the part of the owners would not constitute a "conversion" as envisioned in the State law, but it could be reason for concern if a pattern like this develops in the future.

Approximately 150 housing units have been rehabilitated with funds provided by Community Development Block Grants or the City's Community Development Agency housing set-aside. These units have had occupancy restricted to low or moderate income persons by contracts signed by the property owners. A review of these housing rehabilitation contracts reveals that some of these units can convert to market rates within the next ten years as their loans are repaid. The following table lists the number of units which will be eligible to undergo such conversion in each of the next ten years. It should also be noted that, if the loans are paid off early, the units can be converted to market rates five years later.

<u>year</u>	<u># units</u>	<u>income category</u>
1992 -	0	0
1993 -	8	8 low
1994 -	0	0
1995 -	0	0
1996 -	0	0
1997 -	0	0
1998 -	0	0
1999 -	6	1 very low, 5 low
2000 -	10	10 low
2001 -	0	0

TOTALS	24	1 very low, 23 low

Based on this information, the City is proposing to take the following steps to minimize or mitigate the potential conversion of these units. First, the owners of the units within the redevelopment project area will be contacted by City staff to determine whether they are willing to extend the period of time over which the below-market-rate restrictions will apply. For property owners who are willing to extend the time period through the year 2023, the sunset date of the City's Community Development Agency, the Agency should offer reasonable compensation with housing set-aside funds.

Second, the City has increased the number of units in its calculations of housing need, corresponding to the appropriate income categories. This is intended to compensate for the conversion of all eight of the units which are considered to be at risk of conversion during the initial five year period after the adoption of the new Housing Element.

HOUSING CONDITIONS

Using Community Development Block Grant funds, the City of Arcata contracted with a team of consultants to complete a comprehensive survey of housing conditions in 1989. The process began with a "windshield survey" in which structures were reviewed by consultants on a drive-by basis.

Those structures which were found to warrant more detailed study were evaluated through the use of a point system that addressed foundation, roof, siding/paint, windows, doors, electrical, porches/stairs, sidewalks, and overall site conditions. Three categories were created for the survey: single family dwellings; manufactured dwellings; and structures with multi-family dwellings.

A total of 625 single family dwellings received the more thorough evaluation. Of these, 274 were found to be lacking sidewalks. The consultants also determined that the conditions of the 625 single family dwellings fell into the following categories:

needing minimal repair:	227
needing moderate repair:	365
needing substantial repair:	21
dilapidated:	12.

Manufactured dwellings were reviewed separately in the survey. Thirty-one were found in the windshield survey to warrant more detailed review. These were subsequently divided as follows:

needing minimal repair:	13
needing moderate repair:	16
needing substantial repair:	0
dilapidated:	2.

Thirty-five buildings with multi-family units received the detailed review. These were categorized as follows:

needing minimal repair:	11
needing moderate repair:	23
needing substantial repair:	0
dilapidated:	1.

The results of the 1989 housing conditions survey continue to be of value to the City. With more than ten percent of Arcata's total housing units shown as needing some sort of exterior repair, there is obvious reason to be concerned about the survey results.

The Arcata Economic Development Corporation (AEDC), the organization which administers the City's residential rehabilitation program, uses the information to target possible rehabilitation projects. AEDC loans had already been used to rehabilitate more than 100 units by the time the survey was conducted.

The survey should be repeated periodically to determine whether housing conditions are changing. This could be especially important if the City applies for additional grants for the housing rehabilitation program. Up-to-date information on housing conditions will be necessary to support such applications.

HOUSING NEEDS ANALYSIS

State Housing Element Law requires the inclusion of analyses of the local housing needs of a variety of persons or households who generally have unique housing problems, as well as those of the general population. The following text includes information on the analyses conducted for each of the groups identified by the State. It also addresses housing for students, a major concern in Arcata because of the effects of Humboldt State University on the local housing situation.

Housing Affordability

According to information supplied by the Humboldt County Board of Realtors, the average price of Arcata homes sold in 1991 was \$125,900. Indicating the first decline in selling prices in the last five years. This also appears to support the widely held belief that the pattern of rapidly escalating sales prices which typified the late 1980s has come to an end, at least temporarily.

The average price for a home sold in Arcata in 1990 was \$127,970, this marked an increase of over 100% since 1980, and 680% since 1970. Based on information from the 1990 census, median contract rent has also increased, although at a much slower rate. In 1990, median rent was \$382, up by 278% since 1970. Recent estimates have indicated that fewer than twenty percent of California households can afford to purchase their own homes. This appears to be true in Arcata as well.

According to a survey conducted by the City, rental rates have been gradually rising for the past five years. While vacancy rates in the City's rental units have been on a downward trend, hitting a record low in 1990 of .3%. Survey data for February, 1991, showed that overall vacancy rates for units in multiple family structures had increased to 3.8%. A vacancy rate of five to seven percent is regarded as normal for most communities. A vacancy rate of approximately five percent typically provides a range of choices in the housing market without creating hardships for the owners of rental properties.

It now appears that the shortage of apartment units with three or four bedrooms is the source of one of Arcata's major housing problems. The high demand for these larger rentals is illustrated by a consistent vacancy rate of "0", according to recent surveys. The minimal number of apartments of this size in Arcata compounds the problem for families who are seeking larger living accommodations. Rising rents and low vacancy rates have also had an impact on college students seeking housing close to Humboldt State University.

Housing Needs Resulting From Overpayment or Overcrowding.

Based on 1990 Census data the following figures applied to Arcata as of April, 1990:

Total housing units:	6,302
Owner occupied units:	2,622 (41.6%)
Renter occupied units:	3,451 (54.8%)
Vacant units:	229 (3.6%)

Based on information received from the State Department of Finance, the following figures also reflect April, 1990, circumstances:

OWNER-OCCUPIED UNITS

Household Income	Paying More than 30% for Housing
Under \$10,000	53 (2%)
\$10,000 to \$19,999	122 (4.7%)
\$20,000 to \$34,999	107 (4.1%)
\$35,000 to \$49,999	15 (.6%)
over \$50,000	0
Total overpayment by owner-occupants	297 (11.3%)

RENTER-OCCUPIED UNITS

Household Income	Paying More than 30% for Housing
Under \$10,000	1,135 (32.9%)
\$10,000 to \$19,999	682 (19.8%)
\$20,000 to \$34,999	217 (6.3%)
\$35,000 to \$49,999	9 (.3%)
over \$50,000	0
Total overpayment by renter-occupants	2,043 (59.2%)

Arcata's mean average household income according to the 1990 Census was \$25,483. The median was \$18,551. For Humboldt County, the mean was \$30,985, and the median was \$23,586. Using 80% of the County median as the determinant for "lower income," it appears that approximately half (3,100) of all Arcata households actually met the criteria to be considered lower income households in 1990.

Counting all households with incomes below \$10,000, and 85% of households with incomes between \$10,000 and \$19,999, it appears that 157 (6%) owner-occupied units and 1,715 (50%) renter-occupied units were inhabited by lower income households which were overpaying for housing. These figures are based on 1990 Census numbers, using 30% of income as the determinant of overpayment. 38.5% of all Arcata households were paying more than 30% of their incomes for housing.

Using 1990 Census data for people per unit and people per room, the following numbers have been generated for "over-crowding":

OWNER-OCCUPIED UNITS

1.51 to 2 people/room:	15 units (.6%)
2.01 or more people/room:	<u>0 units</u>
Total:	15 units (.6%)
5 people/unit:	131 units (5%)
6 people/unit:	47 units (1.8%)
7 or more people/unit:	<u>16 units (.6%)</u>
Total:	194 units (7.4%)

RENTER-OCCUPIED UNITS

1.51 TO 2 people/unit:	56 units (1.6%)
2.01 or more people/unit:	<u>11 units (.3%)</u>
Total:	67 units (1.9%)
5 people/unit:	112 units (3.2%)
6 people/unit:	40 units (1.2%)
7 or more people/unit:	<u>19 units (.6%)</u>
Total:	171 units (5%)

Analysis:

These figures further support the conclusions of the Housing Element that a significant number of Arcata households are overpaying for housing and that the households with the lowest incomes are paying the largest percentages of their incomes for housing. Overcrowding, while not to be ignored, appears to be a much less significant problem in Arcata. City efforts to encourage the construction of three and four bedroom rental units should help to alleviate the overcrowding situation.

Regional Housing Needs

Regional coordination in meeting housing requirements is the responsibility of the Humboldt County Association of Governments (HCAOG) and the State Department of Housing and Community Development (HCD). The Regional Need calculations for Arcata and Humboldt County were previously set in 1984. New projections were published in April and adopted by HCAOG in October of 1992. The regional need is expressed as numbers of housing units that are required for each income group. City staff expressed serious concerns about the projections prepared by HCD. Most notable was the State's assumption that a total of 1,282 new housing units will be constructed within the City of Arcata between January 1, 1991 and July 1, 1997. This number was not supported by historical trends nor by logical predictions about the future because of the constraints on local development (Section VII) and population

projections (Section IX). HCAOG has now adopted a Regional Needs Plan projecting 968 additional housing units in Arcata within the stated time period. Humboldt County has challenged the Plan and the issue may not be completely resolved until sometime in 1993. Given the amount of developable property in Arcata, and the provisions of the Housing Element which assure that the needs of lower income households are addressed, the City is prepared to accommodate as many as 1,282 additional housing units, if necessary. The City's actual projection remains considerably below that figure.

The regional needs figures present only part of the picture and should not be relied upon too heavily. They do not remove the need to address the specific housing problems of certain types of households (e.g., the elderly, the homeless, etc.). Also, they do not deal with such problems as overpayment for housing or overcrowding of units.

It should be stressed that, because the regional needs figures are based on historical trends, they tend to be somewhat "self-fulfilling." For example, if thirty percent of Arcata's households consisted of persons with very low incomes in 1991, it may appear that the needs of very low income households are being adequately addressed and that a similar percentage of Arcata's households will have very low incomes in 1997, without any further action on the part of the City. These figures do not address the fact that a growing percentage of the population is having to pay a larger and larger portion of its income for housing.

Between January 1, 1991, and July 1, 1997, the adopted Regional Housing Needs Plan calls for the construction of 968 additional housing units in Arcata. Of those units, 256 are to be available for very low income households, 151 for other lower income households, 195 for moderate income households, and the remainder for households in the "above moderate" income category. While these numbers are substantially higher than the figures projected by City staff, the City has prepared this Housing Element in a manner that assures that Arcata can meet the Regional Needs requirements. In fact, the community can accommodate approximately twice the amount of new housing projected by the City, if necessary, without having to rezone property. The City Council has approved numerous changes to City policies through this Housing Element which will assure that the required percentages of affordable housing are provided. The City Council has even specified that, if the required percentages of affordable housing units have not been met by January, 1996, a system of inclusionary zoning will be enacted.

Student Housing Needs

The 1990 Census indicated that 1300 Arcata residents lived in Group Quarters. 1,101 of these people lived in student housing at the University. 1990 Census data showed that the incomes of persons living in Group Quarters in Arcata averaged only 37% of the per capita incomes of all other Arcata residents. This is a clear indication that local residents of Group Quarters tend to be people of moderate, low and very low incomes. In fact, the residents of group quarters are not counted among the Census figures which showed that more than 25% of Arcata's population was below the poverty level.

By way of comparison, it is worth noting that only about 2.6% of the State's population resides in Group Quarters, and more than half of that number is institutionalized. Nearly 8.6% of Arcata's residents live in Group Quarters and only about 1% of them are institutionalized.

Given the extremely low income figures for residents of Arcata's Group Quarters, it is reasonable to assume that virtually none of these people can be categorized as having incomes which are above moderate. The City believes that at least forty percent of Group Quarters residents have very low incomes, forty percent have low incomes, and twenty percent have moderate incomes. This means that, of the 1300 people residing in Group Quarters in 1990, 520 had very low incomes, 520 had low incomes, and 260 had moderate incomes.

This appears to fairly accurately represent the income breakdown of Group Quarters residents who are primarily students. If these 1300 people occupied individual units throughout the community, a total of approximately 568 housing units would be needed (based on Arcata's average of 2.29 people per household). If these assumptions are accurate, this means that people occupying Group Quarters would need 227 units each for very low and low income categories and 114 units for moderate income persons, if they were housed in individual units.

The numbers of people who are expected to occupy Group Quarters in the future will have a direct bearing on the other types of housing that will be needed. The commitment of Humboldt State University to provide on-campus housing for 502 additional students between January 1, 1991, and July 1, 1997, has the effect of reducing the burden on the City to assure that 175 individual units for people of very low, low, or moderate incomes are provided at other locations. Using the formula noted below, it appears that the numbers of units that would otherwise be needed to accommodate moderate, low and very low income households can each be reduced accordingly. This means that the University will provide housing for the equivalent of 70 very low income households, 70 low income households, and 35 moderate income households during this planning period.

Effects of additional on-campus housing:

502 beds divided by 2.29 (average number of people per household) - 219
219 x .8 (percentage projected to otherwise live in Arcata) - 175
175 x .4 (percentage, very low income) - 70 units
175 x .4 (percentage, low income) - 70 units
175 x .2 (percentage, moderate income) - 35 units

The City did a considerable amount of research in response to an HCD request for more information about the relationship between additional on-campus housing at Humboldt State University and the City's housing needs. The following information responds to the HCD request:

1. Verification that the University's plans were not included within the population projections of the State Department of Finance... City staff contacted the Department of Finance (DOF) and were told that DOF does not prepare projections for individual cities. Because DOF does not do the projections, the City concluded that the University's plans have not

been included within DOF projections.

2. Verification that HSU does not intend to increase enrollment beyond the level anticipated in DOF projections... HSU is not planning on increased enrollment within the planning period.
3. Preparation of a methodology to estimate the impacts of on-campus housing on housing needs at off-campus locations... There is a scarcity of information available to complete such a methodology. At best, it is a "best guess" process because there is no definitive source of information about where students live. Using 1990 Census information, it appears that approximately 50% of HSU's students live within the City of Arcata. Of those, approximately 1,100 (about 7% of the total population) lived on the campus at the time of the Census. Approximately 235 more students now live on campus than in 1990.

On-campus housing is available only to college students, but is not restricted in terms of the age or school year of the occupants. In fact, the occupants are not even required to be full-time students.

It is relatively unusual for students living on campus to come from the surrounding community. The majority of HSU students come from outside the County to go to school (a University study in 1988 showed that the majority of students actually come from more than 500 miles away).

Not more than one-third of the residents of on-campus housing return to live at the University from one academic year to the next. In most cases, students who live in the dormitories or other on-campus housing when they first arrive from other parts of the state move to off-campus housing after their first year at the school. Relatively few students who already live in the area will move to on-campus housing, even when new housing is constructed by the University.

The assumption that there is a direct relationship between the development of new on-campus housing and the need for off-campus housing contained in the Draft Housing Element has now been modified in recognition that it is not true in all cases. It appears to be more accurate to project that approximately 80% of additional on-campus housing will relieve the need for off-campus housing units to serve low and moderate income households. This figure is based on the assumptions that: a) 10% of the students would otherwise be sharing off-campus units with other students; and b) 10% of the students would come from existing housing units in the area but outside Arcata's City limits.

Using the 80% figure has had the effect of changing the housing needs projections of the Housing Element. It is now recommended that the total equivalent number of units provided on-campus be reduced from 219 to 175, with the number of households in each income category reduced proportionately. The number of housing units for each income group has been increased to make up this difference.

In the long term, the University's commitment to eventually provide on-campus housing for twenty-five percent of the number of full-time-equivalent (FTE) students will have a major impact on local housing. This would mean an increase in on-campus housing (889 beds) equivalent to almost 311 total units

throughout the community. This will be particularly significant if the average income levels of the students occupying those units remain low.

On-campus housing, while it plays a critical part in the community's total housing picture, cannot be expected to meet all of Arcata's growing housing needs. While the University continues to provide on-campus housing for a large percentage of the community's lower income residents, it cannot be expected to assist in housing a large percentage of the elderly, the handicapped, farmworkers, or anyone else who is not enrolled at HSU.

The projections of new housing construction shown at the end of this section of the Housing Element place relatively little emphasis on the addition of group quarters housing. It is now expected that the policies and programs of the Housing Element will assure that the required numbers of affordable housing units can be provided.

It should also be noted that, although on-campus housing is owned by the State of California, it is self-supported through its rent structure. This means that the University plays an active part in the local housing market and is actually competing with private housing developers for tenants.

Housing Needs of Moderate, Low, and Very Low Income Households

A growing percentage of the State's households are paying more than thirty percent of their incomes for housing. This is considered "overpayment" in the vernacular of housing planners. The previous threshold of twenty-five percent has been rendered out-of-date by national trends that now include many families paying more than fifty percent of their incomes for housing. A greater percentage of renters than homeowners overpay for housing. Not surprisingly, people with the lowest incomes tend to pay the largest percentage of their incomes for housing.

1990 Census data on household incomes include some sobering figures. The 1980 Census indicated that nearly seventy percent of Arcata renters were paying more than twenty-five percent of their incomes for rent. By 1990 this figure exceeded 73% of rental households. More than half of all Arcata households (renters and buyers) were paying more than twenty-five percent of their household incomes for housing in 1990. It was recently estimated that approximately twenty-two percent of the households in the State of California are paying more than twenty-five percent of their incomes for housing. This means that Arcata households are more than twice as likely to be overpaying than the state average. The 1990 census figures show that this overpayment problem is worsening in Arcata as it is throughout most of the country.

The City is now proposing a variety of incentives for the development of housing for lower income people. By assuring that a certain percentage of new units are available for those with very low, low, and moderate incomes, the overpayment problem will begin to be addressed.

Housing Needs of the Elderly

According to 1990 Census information, there were 1438 persons over age 65 living in Arcata. As in most American communities, Arcata's population is

aging. Since 1980 there has been a 3% increase in the number of persons over 65, now comprising 9.5% of the total population. A total of 437 of those listed lived alone, and 17 lived in group quarters. No housing developments were financed by the City of Arcata during the planning period since 1985. However, the development of housing units to serve senior citizens remains one of the City's priorities. There is also a growing need for "board and care" housing, adult day care, and other services for the elderly.

1990 Census data indicated that 814 owner occupied households, or 31% of the total, were held by persons 65 years of age and older. By contrast, only 156 (4.5%) of the renter-occupied units had householders in that age group. More than 70% of renters were under 35 years of age.

There is nothing too surprising about these figures. Many of the older residents were able to purchase their homes at a time when home-ownership was feasible for a much larger percentage of the population. Given the fact that many of the elderly now live alone or in houses that are now much larger than they need, these numbers support the development of housing which is specifically designed to meet the needs of the elderly. This includes, not only multiple unit projects specifically for the elderly, but also small single family units with small lots and no stairs. Second units, now permitted outright by the City in all residential zones, could help to meet this need.

By providing a range of housing opportunities for the elderly there is a secondary advantage: some of the elderly people who presently live alone are expected to move into second units (adjoining single family dwellings) or into housing developments with units designed specifically for senior citizens. Either of these choices would render the current home available for occupancy, perhaps, by a family with more members.

Between January 1, 1991, and July 1, 1997, the City's standards for the construction of second units are expected to result in at least 74 units, of which at least 24 are expected to be available for occupancy by elderly residents.

Housing developments specifically for the elderly are expected to provide at least 85 units in the next five years.

Housing Needs of the Homeless

According to information prepared by Humboldt County in 1990, there were believed to be 1,200 homeless persons in Humboldt County (roughly 1% of the total population). If County estimates are correct, there could be as many as 160 homeless persons in Arcata at this time. There are currently no facilities providing housing for the homeless in the City of Arcata. Recently the City (acting through the Redwood Community Action Agency) was awarded a grant for the purpose of acquiring and renovating an existing three bedroom house for use as a shelter for not more than six persons.

A local nonprofit corporation, Arcata House, Inc. has now formed to operate the shelter and provide other services to the homeless, and those at risk of homelessness in the Arcata area. While the operation of shelters is seen as

a critical part of a comprehensive strategy for housing, such shelters should be regarded as only one part of the overall plan. By assuring that an adequate number of housing units are provided, especially for households with very low incomes, the City of Arcata and surrounding jurisdictions will do much to prevent homelessness. The prevention of homelessness could provide a significant savings to the public when compared to the costs of providing social services to people after they become homeless. In other words, the prevention is seen as less costly than the "cure."

Arcata's Homeless Services Plan (HSP), prepared in 1990, has been included within the text of the Technical Report for the Housing Element. Note that the recommendations of the HSP have been addressed in the Housing Element and in the revisions to the City's Land Use and Development Guide.

The greatest limitation on the provision of housing for Arcata's homeless is lack of funding. If an adequate source of funding was available, current zoning standards would allow for the construction or conversion of sufficient units to accommodate all of the people believed to be homeless in Arcata. Given the lack of funding, it is projected that only one additional unit, accommodating six persons at a time, will be provided within the next five years.

The idea of creating a campground for the homeless has recently been discussed in Arcata. This approach, or other options which have not previously been considered, may provide another option for the future if the needs of the homeless continue to grow and resources to serve them continue to dwindle.

Housing Needs of Persons With Disabilities

Information from the 1990 Census on the number of persons with disabilities in Arcata indicated that 1,274 adults had "work disabilities." This represented 10% of the total population of that age group. Various agencies providing services to persons with disabilities have reported that they serve from 46 to 74 individuals in the Arcata area. These numbers would indicate that fewer than one percent of Arcatans have disabilities. In fact, however, information generated by the federal government at the time of the adoption of the Americans With Disabilities Act (ADA) of 1990 indicated that more than 15% of Americans have disabilities.

In actuality there are many different kinds of disabilities, only some of which require special consideration in terms of housing. In general, people with disabilities are more likely than other people to be unemployed or underemployed. For this reason, the provision of housing for people with very low incomes will assist in meeting the needs of persons with disabilities.

New State design standards for increasing accessibility in homes and buildings for those with physical disabilities are now being aggressively pursued by the City of Arcata to assure compliance. The standards of the ADA require that all multiple family units in groups of four or more which are readily accessible from the level of parking areas meet accessibility requirements.

It is estimated that at least 64 units will be provided specifically for

people with disabilities over the next five years, due largely to the new access standards.

Housing Needs of Farmworkers

Arcata's agricultural industry is less harvest-oriented than other areas of California. However, some harvesting requiring farmworkers does take place. A majority of the workers employed in this activity are permanent residents, but some migrate into the area and find seasonal housing either in Arcata or nearby communities. City staff contacted the Humboldt County Farm Bureau and the operator of the local agricultural operation known to employ the largest number of farmworkers in the Arcata area, to inquire about the need for additional farmworker housing. The response was that special housing for farmworkers does not appear to be needed in the Arcata area. The State Department of Housing & Community Development (HCD) reached the same conclusion in its April, 1992 draft of Regional Housing Needs for Humboldt County.

This situation may change in future years if adequate affordable housing is not readily available, and increasing numbers of farmworkers migrate into the area. It may be necessary, at some future time, to establish specific housing within the City to accommodate the needs of migrant workers. At present, the nature of local agricultural operations, and the work-force they use, do not necessitate any special housing standards. It may be found that farmworkers arriving only for summer employment are finding housing that has been temporarily vacated by students.

It is projected that between 4 and 9 units will be available for farmworkers over the next five years, primarily in conventional apartment units. If an increasing demand for farmworker housing is found in the future, it should be determined whether this demand is greatest during the summer. Arcata's vacancy rates are considerably higher in summer than at other times of the year because of the seasonal exodus of college students.

Housing Needs of Families

In addressing the needs of families, several different sub-groups should be considered. These include first-time homebuyers, large families, single parent and female headed households. Some needs of families may overlap into other needs. For example, a large family may also be a low income household, or a first-time home buyer may have a disability, etc.

According to the 1990 Census, large families of 5 or more related persons totaled 307 in Arcata. The housing availability problem is compounded for these families due to Arcata's low vacancy rate and lack of larger apartment units. By amending zoning provisions to encourage the construction of larger rental units away from the University the City expects to stimulate the construction of approximately 30 units for families over the next five years.

Female heads-of-households totaled 613, or 10.1% of all households, according to the 1990 census. Since 1980, this figure has increased at an average of about 8% each year. In terms of the housing needs of female headed households, they are very similar to the needs of single parent households. the majority of single parent households are managed by women.

The State Department of Housing and Community Development has determined that female heads of households are more likely than male headed, single parent, households to be providing care for an elderly or disabled family member or for minor children. For these reasons the City is proposing to make numerous changes to the day care provisions of local zoning, including changes that will treat adult day care the same as day care for children. The City is also proposing to waive fees for the providers of adult day care in the same manner as has been done for child care providers. Other provisions of the Housing Element which expand housing opportunities for lower income households should also prove to be beneficial to female headed households and single parent families.

It is difficult to design housing programs specifically for female headed households. It is believed that such things as housing cooperatives, cohousing developments, and housing developments which include day care facilities can all be of assistance to female headed and single parent households. The City is proposing a variety of policy and Code changes to encourage such developments and is projecting that between 115 and 282 additional units will be available to female headed and single parent families during this planning period.

First-time home buyers are usually younger families with limited savings and income, who do not have the advantage of using the appreciation on the sale of one home as a down-payment on another. The City's review of the 1985 Housing Element found that the needs of families and first time home buyers had not been adequately addressed and that provisions of the City's Land Use and Development Guide on parking and floor area ratios actually encouraged the construction of smaller, rather than larger, dwelling units in some zones. As a result of this Housing Element changes are now being proposed to correct these problems.

There are no accurate figures available on the numbers of local people who would like to be able to afford to purchase their first home. The City is convinced that a market does exist and intends to utilize some of the housing set-aside money of the Arcata Community Development Agency to implement a program to assist first-time home buyers. Also, the City will be seeking a grant through the federal HOME (Housing Investment Partnerships Program) and is participating in the Mortgage Credit Certificate (MCC) program administered by the County Housing Authority to help assist first-time homebuyers. The MCC program allows qualifying buyers to claim a tax credit for a portion of their mortgages. This has the effect of qualifying more people for mortgages or increasing the size of the loan for which an applicant may qualify. The City may be able to combine down payment or monthly payment assistance from Community Development funds with the MCC program. It is estimated that the combination of the programs will result in the acquisition of a total of 30 to 45 housing units by first-time homebuyers in the next five years. It should also be noted that displaced homemakers and single parents can qualify for first-time homebuyer programs under some circumstances.

Large Households

The figures listed above showing the number of units with five or more persons indicate Arcata's "large households" as of April, 1990. While this

information is valuable, it would be much more valuable to know how many other large households were unable to locate in Arcata, or had to leave as their families grew, because of the lack of housing for large families. Unfortunately, those statistics do not exist.

The fact that more large households were owners than renters was indicative of the lack of rental units with three or more bedrooms, especially apartments. This makes it virtually impossible for large families with lower incomes to locate in Arcata unless they have some sort of financial assistance. Even with such assistance, the vacancy rates for such larger rentals remain at or near zero.

These numbers support the City's efforts to increase the construction of larger rental units, with more of an emphasis on family occupancy.

Housing in the Redevelopment Area

The City of Arcata established a redevelopment area in 1983. Directed by the members of the City Council, sitting as the Community Development Agency Board, the redevelopment project area includes roughly one-third of the developed area of the City. This includes the growing Valley West area, the downtown, and a number of other neighborhoods where considerable housing development is expected to occur. It is estimated that approximately one-half of all housing development which will occur in Arcata over the next five years will happen within the redevelopment area. This means that several hundred units will be subject to the statutory inclusionary requirements of State Redevelopment Law. Fifteen percent of the units will have to be available for low and moderate income persons. Six percent must be for very low income persons. The City will have to assure that these inclusionary requirements of state law are met in the course of implementing the Housing Element.

Summary

There are specific housing needs that the City of Arcata must address for the benefit of specific groups. These groups include the elderly, disabled, homeless, and low-income persons. Arcata also recognizes that families, first time home buyers, and students are in need of housing opportunities. All of these groups have been adversely affected by rising housing costs, low vacancy rates, and competition from new people entering the community.

It should be stressed that categories such as elderly, handicapped, female headed households, large families, the homeless and farmworkers are not mutually exclusive. It is conceivable for any given household to be made up of any or all of these categories. There is also no direct correlation between income levels and any of those categories. It is generally true that the more affordable housing that is provided the better for the elderly, the handicapped, farmworkers, large families, the homeless, and female headed households, but there are obvious exceptions to this generalization.

PROJECTIONS OF HOUSING CONSTRUCTION
JANUARY 1, 1991 - JULY 1, 1997

Single Family Dwelling Units
(includes manufactured dwellings,
attached and detached units):

	City projections <u>108 units</u>	Adopted Reg. Needs <u>161 units</u>	Potential Reg. Needs <u>183 units</u>
Elderly (20%):	22	32	37
Handicapped (5%):	5	8	9
Large Families (5%):	5	8	9
Female Headed & Single Parent Households (8%):	9	13	15
Farmworkers:	0	0	0

Units by
Income Levels

Very Low:	5	7	7
Low:	10	14	15
Moderate:	21	31	32
Above Moderate:	72	109	129

Total units:	108	161	183

Second Units
 (includes manufactured dwellings,
 attached and detached units):

	City projections <u>74 units</u>	Adopted Reg. Needs <u>111 units</u>	Potential Reg. Needs <u>126 units</u>
Elderly (33%):	24	37	42
Handicapped (5%):	4	5	6
Large Families:	0	0	0
Female Headed & Single Parent Households (26%):	19	29	33
Farmworkers (1%):	1	1	1

Units by
Income Levels

Very Low:	15	22	25
Low:	22	33	38
Moderate:	27	41	46
Above Moderate:	10	15	17

Total units:	74	111	126

Multiple Family Dwelling Units:

	City projections <u>291 units</u>	Adopted Reg. Needs <u>504 units</u>	Potential Reg. Needs <u>781 units</u>
Elderly (10%):	28	50	78
Handicapped (8%):	22	40	62
Large Families (10%):	28	50	78
Female Headed & Single Parent Households (30%):	87	151	234
Farmworkers (1%):	3	5	8

Units by
Income Levels

Very Low:	86	145	224
Low:	55	73	93
Moderate:	52	91	146
Above Moderate:	98	195	318

Total units:	291	504	781

Group Quarters
(On HSU Campus):

502 beds - Equivalent to 175 total units

	<u>City projections</u>	<u>Adopted Reg. Needs</u>	<u>Potential Reg. Needs</u>
Elderly:	0	0	0
Handicapped (10%):	18	18	18
Large Families:	0	0	0
Female Headed & Single Parent Households:	0	0	0
Farmworkers:	0	0	0

Equivalent units by
Income Levels

Very Low:	70	70	70
Low:	70	70	70
Moderate:	35	35	35
Above Moderate:	0	0	0

Total equiv. units:	175	175	175

Group Quarters
(Off HSU Campus):

37 beds - Equivalent to 17 total units

	<u>City projections</u>	<u>Adopted Reg. Needs</u>	<u>Potential Reg. Needs</u>
Elderly (80%):	14	14	14
Handicapped (100%):	17	17	17
Large Families:	0	0	0
Female Headed & Single Parent Households:	0	0	0
Farmworkers:	0	0	0

Equivalent units by
Income Levels

Very Low:	14	14	14
Low:	3	3	3
Moderate:	0	0	0
Above Moderate:	0	0	0

Total equiv. units:	17	17	17

TOTALS

	City projections <u>665 units</u>	Adopted Reg. Needs <u>968 units</u>	Potential Reg. Needs <u>1,282 units</u>
Elderly:	88	133	171
Handicapped:	66	88	112
Large Families:	33	58	87
Female Headed & Single Parent Households:	115	193	282
Farmworkers:	4	6	9

Units & equivalent units by Income Levels

*	Very Low:	190 (28.6%)	258 (26.7%)	340 (26.5%)
**	Low:	160 (24.1%)	193 (19.9%)	219 (17.1%)
***	Moderate:	135 (20.3%)	198 (20.4%)	259 (20.2%)
	Above Moderate:	180 (27.1%)	319 (32.9%)	464 (36.2%)

	Totals:	665	968	1,282

- * 84 of those listed for very low income households are equivalent units projected to occur in group quarters.
- ** 73 of those listed for low income households are equivalent units projected to occur in group quarters.
- *** 35 of those listed for moderate income households are equivalent units projected to occur in group quarters.

NOTE: All figures are based on 100% occupancy.

CONSTRAINTS TO HOUSING DEVELOPMENT

Arcata is a community with a variety of constraints to housing development. A quick overview of the natural setting of Arcata reveals a town which is virtually surrounded by characteristics that limit development. These include: flood plains, wetlands and prime agricultural lands to the north, west, and south; prime timber lands with some steep slopes and some areas of unstable conditions to the east; and high seismicity (an Alquist-Priolo Special Study Zone runs through the middle of town). There are no vacant areas for housing that do not have at least some constraints.

State Housing Element Law requires every city and county to analyze the effects of both governmental and nongovernmental constraints to housing development. It should be noted that some of the items listed can be regarded as both governmental and nongovernmental constraints. For instance, "steep slopes" are naturally occurring, nongovernmental constraints to development. However, regulations limiting development on steep slopes are governmental constraints. Rather than redundantly list such things in both categories, they are listed under governmental constraints and it is hoped that the reader can see the connections between natural features and governmental constraints.

GOVERNMENTAL CONSTRAINTS

1. LAND USE CONTROLS.

A number of different kinds of development constraints can be considered to be land use controls. In Arcata, these include:

- a. *Zoning.* Every piece of property within the City of Arcata has been zoned for one type of development or another. A large percentage of the City is zoned for nonresidential purposes. While zoning can be changed when situations warrant, a considerable area of the City will never be considered to be suitable for significant residential expansion.
- b. *Criteria for Discretionary Land Use Decisions.* The criteria for the approval of some land use decisions presently contain provisions which focus on the effects of the proposed development on the immediate vicinity. They do not contain language allowing the decision-makers to balance the effects on the immediate neighborhood against those on the community overall. This situation increases the potential for "not in my back yard" (NIMBY) reactions from neighbors opposed to the development of low cost housing. The City is now proposing changes to the criteria for these sorts of applications that will allow for a community-wide, net-benefit analysis. Neighborhood concerns will remain a part of the criteria, but will not outweigh the community-wide perspective. The implementation of the policies and programs of the Housing Element is expected to assure that affordable housing is addressed in all housing developments, regardless of neighborhood preferences about the socio-economic status of future residents.
- c. *Coastal Zone Requirements.* Nearly all of the land to the west and

southwest of the City, as well as a substantial portion within the City limits, is within the California Coastal Zone. Both the City of Arcata and Humboldt County have adopted Local Coastal Plans which have been approved by the State Coastal Commission. Proposals to rezone property within the Coastal Zone require the approval of both the local government and the Coastal Commission. While this does not necessarily preclude the development of additional housing within the Coastal Zone, the required process can be expected to add at least six months to any rezoning proposal in the area.

- d. *Agricultural Lands.* A common pattern for much of the nation has been the conversion of agricultural lands to urban uses, often without regard for the long-term consequences of these actions. The City of Arcata has, for some years, refused to support this approach to community growth. The City recently reaffirmed its commitment to maintaining agricultural lands through the update of the Open Space and Conservation Elements of the General Plan. The agricultural lands in and around Arcata are not considered to be available for conversion to residential use.

The City has recognized that there may be some potential for "trade-offs" such as allowing the development of small clusters of development in agricultural areas in exchange for a long-term commitment that the remainder of the farm will remain in agricultural use. Such trade-offs will only be used if they help to assure that the majority of productive agricultural lands are protected from conversion to other uses.

- e. *Steep Slopes.* The City of Arcata contains a significant area of hilly terrain. Due to both public safety and aesthetic concerns the City has strictly limited hillside development. Two tiers of limitations have been applied, one affecting properties with slopes between 15 and 25%, and the other for slopes exceeding 25%. Virtually no development is allowed in the latter category. The hillside areas of the City contain a significant amount of land in both categories.

- f. *Geologic Limitations.* As a result of Arcata's unique mix of geologic conditions, steep slopes, weather, soils and existing development, a variety of development limitations have been established in the interest of public safety. Most notable of these is the Alquist-Priolo Special Study zone, a portion of the community mapped by the State because of special seismic safety concerns. The Alquist-Priolo Zone contains a potentially active fault along which the ground may rupture in the event of a significant earthquake. One and two-story, wood framed, single family dwellings are exempt from Alquist-Priolo requirements. Virtually all other developments require special geologic research to determine fault locations and appropriate development limitations. In actuality, the high cost of completing the necessary geologic research and evaluation has prevented the construction of housing as well as other development projects. It should be noted that the Alquist-Priolo requirements do not necessarily preclude development, but they can make the costs of certain developments prohibitive.

Outside of the Alquist-Priolo Zone there are other geologic, engineering and soils reports required prior to construction of housing in many locations. These often result in special foundation or retaining wall

construction to deal with geologic or soils constraints. Such reports, and the changes to construction standards that they may require, add to the cost of housing but do not appear to have significantly affected the number of units constructed. These geologic, engineering and soils reports are now regarded as fairly routine for many local developments. The City is expected to reconsider the geologic requirements of the Land Use and Development Guide in the future to determine whether they have been applied too broadly, especially where wood framed, single story, single family dwellings are proposed.

- g. *Wetlands, Creek Zones, and Flood Plains.* The City strictly enforces the flood insurance standards of the Federal Emergency Management Agency (FEMA). The City also limits developments in wetlands and along creek channels. Because of Arcata's natural characteristics a significant amount of the community has development restrictions associated with wetlands, creek zones, and flood plains. As noted above, the outward expansion of the City is constrained by flood plains, creek zones, and wetlands on nearly three sides. The new Housing Element includes provisions which will avoid a reduction in allowable residential densities in these areas, provided that the developer uses the City's Planned Development system and incorporates resource protection or enhancement features in the design.

- h. *Open Space Requirements.* Each zoning district in the City specifies a minimum amount of open space (property not covered by buildings, driveways, or parking spaces). Under the current system, the open space requirements of the residential zones are among the most important factors in determining the amount of development, and, indirectly, the number of dwelling units which can be constructed. The City actually increased the required open space for several of the residential zones within the previous five years.

At this time, only the current 80% open space standard of the Rural Residential (R-R) Zone is proposed to be changed. A reduction to 70% is expected to assist in the development of second units in the R-R Zone. This is a relatively minor change that is not expected to have a significant effect on any part of the community.

It has been recommended that the City continue to monitor the effects of the open space requirements and consider changes over time. This could be of particular importance if specific design standards can be created which allow for increased housing development without a significant detrimental impact on the amount of light, air, and open "feeling" of any given development.

- i. *Floor Area Ratios.* The major factor in determining housing density under the City's current zoning system is the use of Floor Area Ratios (FAR) in residential zones. The FAR is the ratio of the total floor area to the lot area within a development. A development with 25,000 square feet of floor area on a lot of 100,000 square feet would have a FAR of 25%, regardless of the number of stories contributing to the floor area.

The use of FAR, rather than specifying a maximum number of units per acre, has both benefits and detriments. On one hand, developers are

free to be more creative in finding ways to maximize the number of units constructed through the FAR system. On the other hand, developers have no incentive to construct apartment units for family occupancy. This is because the FAR system effectively encourages developers to build small units. Under this system virtually no three or four bedroom units are likely to be constructed, unless some other incentive is provided.

The City is now proposing a system which will continue to use the FAR approach near the University but will use another system in other areas, in an effort to encourage the construction of more family housing.

- j. *Height Limitations.* The City's zoning standards set height limitations for each zone. For residential zones these limitations effectively limit the style of construction to two, three, or four stories, depending upon the specific area. Also, these requirements specify that the distance that a building must be set back from property lines increases with the height of the building.

There has not yet been any political movement towards increasing the height restrictions of City zoning. This may be because construction costs tend to increase significantly for structures greater than three stories in height. At some point in the future, however, the City may have to allow for the development of taller residential structures in order to continue the policy of not urbanizing agricultural and other open space lands. Political pressure to increase allowable building heights can be expected when land values reach the point where they warrant the expense of constructing buildings which are greater than three stories in height.

Current Residential Development Standards. Existing residential development standards, including maximum floor area ratio (FAR), minimum open space (O.S.), and building height limitation, are listed in the following chart:

<u>District</u>	<u>FAR limit</u>	<u>Min.O.S.</u>	<u>Max.Height</u>
F-H	n.a.	80%	35 ft.
R-R	n.a.	80%	35 ft.
R-L	n.a.	50%	35 ft.
R-M *	35% (62.5% w/D.B.)	50%	35 ft.
R-MH *	50% (95% w/D.B.)	40%	45 ft.
R-H *	75% (125% w/D.B.)	30%	45 ft.
CBD	n.a.	10%	45 ft.

* Indicates potential FAR increase, subject to density bonus (D.B.) provisions.

Note that the setback requirements for all of these zones, except CBD - which allows zero setbacks, are as follows: Street side: 10 ft.; Interior side: 5 ft. Both street and interior side setbacks are increased by one foot for every two feet of building height.

A comparison of allowable densities to typical densities makes it clear that considerably more housing units could be built under the existing

standards if developers would choose to use the established density bonus provisions and build taller buildings. The factors limiting density are ones of developer preferences and economics, rather than governmental constraints to housing development.

- k. *Parking Requirements.* The City currently requires off-street parking based on the square footage of use. This is a relatively unusual system when applied to residential developments. Most cities specify a minimum number of parking spaces per unit, or some combination of these approaches. Arcata's system of considering only the square footage (floor area) of the units has the effect of encouraging developers to construct more, smaller units, thereby discouraging the construction of housing for family occupancy.

The City is now proposing a change to this pattern that would require at least one parking space per unit in most cases, and generally more off-street parking for most types of housing. An exception would be in the area near the University where it is reasonable to expect a larger percentage of tenants without cars.

- l. *Noise Element Requirements.* Having both a freeway and a railroad bisect the community, there are obvious reasons to be concerned about noise in Arcata. The adopted Noise Element of Arcata's General Plan contains maps with special standards for construction near sources of noise. In most cases, the Noise Element would not preclude the construction of housing but sets standards for the design or construction of dwelling units in noise impact areas. One of the interesting features of the Noise Element is that the allowable noise levels for multiple family areas exceed those for single family areas. Although this has been questioned by some, it remains part of the current General Plan. It does appear to be reasonable to allow for generally higher densities along major travel corridors or in places where people can reach destination points on foot.

- m. *Historic Preservation Requirements.* A number of sites in Arcata, especially older homes, have been zoned for historic preservation. This overlay zoning system does not necessarily prevent the removal of these units, but it does provide incentives to retain and maintain them.

There are also disincentives for removing historically and architecturally significant buildings. As part of the City's adaptive reuse program for these structures, they are generally allowed to be converted from single family to multiple family use, usually without additional parking required.

- n. *Day Care Requirements.* The Arcata City Council has now formally recognized the important connection between day care services and both housing and employment. The City has even waived application fees to assist child care providers. If strictly interpreted, the current zoning requirements would preclude most day care other than in residences and would limit it to care of children. Changes to these requirements are now proposed to allow for adult day care on the same basis as day care for children and to clarify that day care is allowed in a variety of settings other than within the caregiver's residence.

An additional proposal would waive planning and building fees for the providers of adult day care, in the same manner as they are currently waived for those providing child care. This combination of changes is expected to be of particular benefit to single parents and female heads of households, who are often in the position of caring for children or adult family members who need day care.

- o. *Services for the Homeless and Those "At Risk" of Homelessness.* There are currently no facilities providing shelter for the homeless in the City of Arcata. The City, working with the Redwood Community Action Agency, has recently been awarded a grant for the purpose of acquiring and renovating an existing three bedroom house for use as a shelter. A nonprofit group, Arcata House, Inc., has formed for the purpose of operating this shelter and promoting a variety of services for the homeless. A Homeless Services Plan has been prepared for the City; it is included within the Technical Report of the Housing Element.

Unlike many communities, Arcata does not preclude the development of homeless shelters in most zones. Some relatively minor amendments to City zoning requirements have been proposed to help facilitate the provision of housing for the homeless. At this point, however, the most significant constraint to the provision of homeless services in this community appears to be lack of funding.

- p. *Design Review.* The City of Arcata requires virtually all new construction projects, other than single family dwellings, to receive the approval of the City's Design Assistance Committee. The Committee primarily reviews projects for exterior appearance, landscaping, and energy efficiency. This process can add time and expense to the development of housing. The Committee has a practice of working with developers in finding ways to keep costs down, but some applicants still believe that the design review process is an unnecessary burden. As the City seeks ways to accommodate more people, without expanding into valuable resource lands (i.e., in-filling), the Design Assistance Committee is expected to play an increasingly important role. Rather than diminishing the role of the Committee, the City may strengthen that role in order to assure that, as densities increase, amenities are not disregarded.

The City's existing design review process does not determine allowable densities. It can specify construction materials, design, and landscaping for residential developments. Contacts with local architects who have undergone numerous experiences with Arcata's Design Review process indicate that they estimate that project costs typically increase only by the application fees (less than \$100) as a result.

The design review process can add three weeks or so to the overall development review process, but most designers work around this delay by completing detailed drawings and contract documents during the appeal period for design review.

No specific changes to the design review process are recommended as a result of the new Housing Element. Rather, it is recommended that the City's Design Assistance Committee be given more support in its efforts to assure that housing at increased densities provides the kinds of

amenities that allow for a quality living environment for all local residents, regardless of their income levels.

2. CODES AND ENFORCEMENT.

The City's approach to codes and enforcement is not considered to be a significant constraint to housing development or use. Most building and zoning enforcement activities of the City are in response to complaints by citizens. Unlike some communities with more aggressive Code enforcement programs, the City of Arcata does not have an ongoing program of inspecting existing residences for code compliance.

Other than special standards for historic buildings, the City has not adopted local amendments to building codes which have any effect on housing. The historic codes have had the effect of encouraging the retention of historically and architecturally significant buildings. The division of such older buildings into multiple units under these codes has actually increased housing opportunities.

3. ON/OFF-SITE IMPROVEMENT REQUIREMENTS.

Arcata has fairly typical improvement requirements for new residential construction. Off-site improvements are generally only required where necessary to allow for the proposed density of development. For instance, a proposal to construct a high density housing project at the end of a gravel road can be expected to require full street improvements along that access road.

The City does have the practice of varying improvement requirements with the expected development of the area. Housing developments in areas which are predominantly hillside, rural residential or agricultural are less stringent than those in more "urban" parts of Arcata. Where current "rural" development patterns are expected to change, however, the City will require improvements to match the higher intensity of development which is expected to follow.

Typical off-site improvement requirements for residential developments include street construction consisting of sidewalks, curbs, gutters, and sewer and water line extensions. Given that a 50 foot wide right-of-way is typical, any given development would be responsible for one-half of those improvement costs (i.e., one side of the street). This averages about \$72.75 per linear foot or \$5,057.50 per 70 foot wide lot.

Typical on-site improvement costs include paved parking areas and landscaping, as well as sewer and water connection charges. Paved parking costs an average of approximately \$650 per space. Landscaping costs for multiple family projects typically average between 2% and 4% of construction costs. For a ten-unit apartment complex with ten off-street parking spaces and construction costs of \$300,000, the parking improvement costs would be about \$6,500 and landscaping costs would be between \$6,000 and \$12,000.

Typical sewer and water connection charges are shown in the following list:

Single Family Dwelling:	sewer - \$1,020
	<u>water - \$890</u>
Totals:	\$1,910

Second Unit:	sewer - \$280
	<u>water - \$445</u>
Totals:	\$725

Four-plex:	sewer - \$1,860
	<u>water - \$1,285</u>
Total:	\$3,145

10 Unit Complex:	sewer - \$4,710
	<u>water - \$2,735</u>
Total:	\$7,445

FEES AND EXACTIONS.

The City of Arcata collects a fairly conventional range of fees and exactions from persons developing housing projects. These include water, sewer, and storm drainage utility fees, park development fees, plan check, and permit fees. Also, developers are expected to provide rights-of-way and cover the costs of on and off-site improvements, as necessary.

The park development fees actually consist of two different types of exactions. The first is a fee collected in lieu of property dedicated for park purposes at the time of subdivision. The parkland in lieu fee is based on the formula contained in the California Government Code, often called the "Quimby Act." Currently set at less than \$400 per lot, the fee has not been raised in a number of years, in spite of Ordinance language indicating that it will be revised annually. This fee is expected to be increased significantly in the near future, based on the standards of the Government Code.

The second fee is termed a "residential construction tax" and is based on the value of proposed construction, for all residential units beyond the first unit on a site. In other words, a single family dwelling is exempt from this tax, as is the first unit of any multiple unit project. All additional units are charged a tax equal to 1% of the valuation of the planned improvements. The residential construction tax is intended to supplement the "fees in lieu of dedication" system and assure that persons developing multiple family units are contributing to park improvements. By tracking the value of planned improvements, the residential construction tax increases automatically with inflation.

The City also has a fee system which is available only in the Central Business District (CBD) and Landmark Historic Preservation (LHP) Zones. In these areas a developer can request a waiver of the normal off street

parking requirements, agreeing to pay a fee in lieu of providing the parking. Because it is not possible to provide additional off street parking in some parts of the downtown area without demolishing existing buildings, this fee system is actually of benefit to developers wishing to provide housing in the CBD. It is used in the LHP Zone to encourage the reuse of historic structures without requiring their removal.

Typical fees and exactions for residential development include charges made for recreational facilities and for storm drainage. The following examples are intended to show how these fees work. The examples are based on: a) a single family dwelling being constructed on a 6,000 square foot lot with an estimated construction cost of \$70,000; b) a 500 square foot second unit with an estimated cost of \$25,000 being added to the single family dwelling; and c) a ten unit apartment complex on a 10,000 square foot lot with an estimated construction cost of \$300,000.

Note that improvement costs and utility connections are reviewed separately in the section which follows on "construction costs."

Single family dwelling:

Residential construction tax:	n.a.
Parkland in-lieu fee (charged at time of subdivision):	\$ 388.80
Drainage fee:	<u>\$ 233.00</u>
Total	\$ 621.80

Second unit (added to SFD, above):

Residential construction tax:	\$ 250.00
Parkland in-lieu fee:	n.a.
Drainage fee:	<u>n.a.</u>
Total	\$ 250.00

10 unit apartments:

Residential construction tax:	\$ 2,700.00
Parkland in-lieu fee:	n.a.
Drainage fee:	<u>\$ 347.00</u>
Total	\$ 3,047.00

5. PROCESSING AND PERMIT PROCEDURES.

In spite of the relatively small size of Arcata's planning and building staff, and the heavy workload it has dealt with in recent years, permit processing by the City has not been especially time consuming for applicants. Recent changes to the City's fee schedule and procedures should improve this even further. Applicants for all discretionary projects are now being encouraged to hire professional assistance in the preparation of initial environmental documents. Also, because the City now bills applicants for a percentage of the actual costs of processing major applications, it behooves applicants to file more complete information at the start of the process. By doing so, applicants can expect to reduce their total processing costs accordingly.

Where the land is zoned for the type of development proposed, the typical application review time for residential development can be

summarized as follows:

Single Family Dwelling: three weeks from filing completed application to issuance of building permit.

Multiple Family : six weeks from filing completed application to issuance of permit.

6. OTHER GOVERNMENTAL CONSTRAINTS.

A variety of other governmental constraints affect housing opportunities in Arcata. Most notable of these is the lack of effective regional coordination among the various cities and the county government in terms of housing. For example, the availability of housing in McKinleyville has a direct effect on housing in Arcata, and vice versa. There are also a range of other issues involved where the County permits the construction of an increasing number of housing units outside the City limits, but within Arcata's planning area. Such issues as inadequate roads, lack of water, lack of police protection, potential for septic system failures, and general reliance on City services, without providing tax revenues for those services, all have yet to be effectively addressed by the City and County.

Without a coordinated approach to housing which is supported by all levels of government in the vicinity of Humboldt Bay, it is probable that some communities will take on a disproportionate share of the responsibility for meeting the housing needs of lower income persons. It behooves the City of Arcata to do its fair share and to insist that Humboldt County and other nearby cities do the same.

Another governmental constraint facing Arcata, and similar small cities in California, is the size of the staff available to undertake housing projects. With only two professional planners on the City's staff, nearly all staff time is consumed by development review activities and there is virtually no time to undertake long-range planning or housing development activities. In recognition of this limitation the City is expecting to place a greater emphasis on roles played by the Humboldt County Housing Authority and the Arcata Economic Development Corporation. The latter organization has a proven track record of successful grant administration, housing rehabilitation programs, and the development of co-op housing. It is hoped that these skills can be expanded to include other housing development for lower income persons.

One of the more interesting potential constraints to housing development can be found in Article XXXIV (34) of the Constitution of the State of California. This provision requires voter approval before a local jurisdiction can develop, construct, or acquire most types of "low rent housing projects." This creates a potential "catch 22" for cities, especially those with redevelopment functions, because they are required to use 20% of their redevelopment tax increment dollars for housing projects which their voters may not approve. Arcata's voters approved an Article XXXIV ballot measure in April 1992 which will allow the number of assisted housing units to keep pace with other residential

growth. The ballot measure allows for the development of assisted housing totaling up to five percent of the number of housing units in the City. This will increase the City's flexibility in the use of tax increment funds, which have already been generated, to help fund one or more housing projects within the City's redevelopment area.

NONGOVERNMENTAL CONSTRAINTS TO HOUSING DEVELOPMENT

1. FINANCING

The availability of private financing for housing projects appears to be a growing problem. Changes to federal tax laws reduced the incentive to developers of rental housing in 1986. More recently, the crisis in the savings and loan/banking community has resulted in a much more conservative lending climate for housing. Even developers with an excellent financial track record have found it difficult or impossible to secure funding for projects which previously would have been relatively easy to finance.

While there is little that the City of Arcata can do about a nationwide shortage of financing for housing, there are minor changes proposed to local codes which are intended to facilitate housing loans. Financing groups of four and fewer units remains much easier than financing larger projects. For this reason the City is proposing to reduce the minimum lot size required in multiple family areas to a size that will support the development of four units per lot.

The City also will continue to work with local lenders to emphasize the importance of housing loans as part of their efforts under the Community Reinvestment Act.

Arcata is not known to be suffering from "redlining" (where lenders deliberately exclude certain parts of town from the area where loans are approved) or other such inappropriate lending practices.

2. LAND COSTS

Land costs in Arcata are among the highest in Humboldt County. This is primarily a result of this community being a preferred place for many people to live and a result of the limited amount of readily developable residential property (see information above on Land Use Controls). The combination of Arcata's constraints on development and the high demand for housing create a "seller's market" where land prices exceed those of surrounding communities.

A number of the proposals included in the Housing Element are intended to provide more opportunities for residential development through "in-filling." Theoretically, an increase in the "supply" of developable properties should result in a decrease in price. This is only true, however, if there is not a sufficient demand to take up the slack in the marketplace. This appears to be very questionable in a place like Arcata because a large percentage of new residents are arriving from the Bay Area or Southern California, where land values have become so

inflated that Arcata's prices appear to be bargains, regardless of the land prices of other Humboldt County communities. This attitude also contributes to the displacement of local families who cannot compete with those new arrivals who come with a large "nest egg" from a land sale in another part of the State.

This situation is one reason why Arcata is strongly supporting programs to assist first time home-buyers, and is researching ways to give priority to local persons in funding such programs.

Vacant, residentially developable land in Arcata rarely appears on the market. When new lots are divided off of existing properties it is usually done by developers with their own construction plans. Such lots are rarely sold on the open market. This situation makes it somewhat difficult to determine land costs for residential construction.

According to research completed by a professional appraiser, the least expensive Arcata lots which are zoned for low density development sold recently for \$40,000 to \$45,000. Comparable lots in surrounding communities, with the exception of the City of Trinidad where land prices are much higher than the rest of the County, would sell for approximately \$30,000 to \$35,000.

The same appraiser estimates that land zoned for multiple family development sells for about \$15,000 per permitted unit in Arcata, while comparably zoned land in surrounding communities sells for approximately \$10,000 to \$15,000 per unit. In other words, a 10,000 square foot lot which is zoned to allow the construction of ten units would sell for about \$150,000 in Arcata and \$100,000 to \$120,000 in Eureka or McKinleyville.

When queried, most Arcatans cite the quality of life or the location of Humboldt State University as the reason they choose to live here rather than in a less expensive neighboring community. For a variety of reasons, Arcata remains a very popular place to live; one where many people are willing to pay something extra for the opportunity.

3. CONSTRUCTION COSTS.

The City has received no information which indicates that the actual costs of residential construction (other than land costs) in Arcata are higher than for surrounding communities. One factor which should be recognized about Humboldt County overall, however, is that most of the local developers are relatively small companies without the wherewithal to undertake large housing projects. Large developers from outside the area are apparently reluctant to develop projects in Humboldt County.

According to contacts with local architects, construction costs in Arcata are essentially the same as those for sites in surrounding communities. The publication *Building Standards* lists construction costs for this area, as of December, 1991, at an average of \$48.41 per square foot for wood frame single family and second units. Multiple family, wood frame structures averaged \$46.81 per square foot. This means that the construction cost of a 1,200 square foot single family

dwelling would be \$58,092 while 750 square foot apartment units would cost \$35,108/each. In fact, however, local architects report that these figures are somewhat lower than actual average construction costs in Humboldt County, largely because of significant increases in the costs of lumber over the last two years.

SITES THAT ARE POTENTIALLY AVAILABLE FOR RESIDENTIAL DEVELOPMENT

State Housing Element Law (Government Code Section 65583) requires every city and county to conduct an inventory of land that is, or could be, available for residential development. This inventory includes not only those sites which are vacant and presently zoned for housing, but also places where additional housing might be provided through redevelopment or encouraged through the rezoning of property. The availability and capacity of public services and facilities also must be considered in this analysis.

Vacant, residentially zoned, fully served properties appear to be scarce in Arcata. Where they exist such sites are very much in demand by developers. Still, the City has determined that adequate sites are available to accommodate projected residential growth until well beyond the planning period of this Housing Element.

A common pattern today is the redevelopment of previously developed sites or the conversion of properties from one type of use to another. These include the upzoning of sites from one residential designation to another or zone changes from industrial to residential.

The land outside the City limits which could be annexed and developed at increased residential densities is included in this analysis and in Section X, Urban Reserve Areas. It should be noted, however, that such constraints as wetlands, flood plains, prime agricultural lands, and steep slopes significantly limit the urban development potential of most of the land outside of the City limits.

It should be emphasized that there are no locations where it would be appropriate for the City to rezone the property without completing an environmental review of the impacts of such changes. The vacant industrial properties, because of the types of industrial activities that were common in this area, invariably warrant study for possible toxic contamination before conversion to other uses. Such studies are costly and cannot be completed without the involvement of the property owner. Residential and commercial properties which may have potential for conversion or redevelopment at higher densities present other potential problems. After review of every City neighborhood, including the availability of vacant and redevelopable properties, and the capacity of various public facilities and services, it was concluded that the City should not initiate the change of zoning of any properties as part of this Housing Element. This does not, however, mean that properties should not be rezoned or redeveloped. Rather, it means that the owners of such properties retain the burden of proving that such rezoning or redevelopment is appropriate in view of environmental and other requirements.

In the course of analyzing properties for possible rezoning or redevelopment, the City has considered a wide range of potential housing developments. The following summarizes this review, including both vacant residential acreage and a list of specific sites.

Zoning regulations of the City of Arcata provide two agricultural districts (zones), six residential districts, and one commercial district where residential development is permitted outright. Additionally, residential development is permitted, subject to use permit approval, in the General

Commercial and Industrial-Commercial districts. (Note that in all of these examples there is no differentiation made between zoning districts inside and outside the Coastal Zone.)

For purposes of the following analysis, only the residential districts and Central Business District have been included. Although a certain amount of residential development will occur in the other zones, it is too difficult to project the extent of that development at this time. The following chart indicates the potential residential development of vacant properties in each district under current standards.

BUILD-OUT IN UNITS PER VACANT ACRE

<u>Zone</u>	<u>Typical Build-out</u>	<u>Max. Build-out</u>
F-H	.5	1
R-R	.5	1
R-L	4	7
R-M	12	30
R-MH	20	50
R-H	45	80
CBD	20	100

Using these numbers and multiplying them by the vacant acreage of each district produces the following results:

BUILD-OUT IN UNITS PER VACANT ACRE

<u>Zone</u>	<u>Vacant Acres</u>	<u>Typical Build-out</u>	<u>Max. Build-out</u>
F-H	382	191	382
R-R	46.3	23	46
R-L	86.4	346	605
R-M	89.7	1,076	2,691
R-MH	37.3	746	1,865
R-H	2.9	131	232
CBD	3.8	76	380
Totals	648.4	2,589	6,201

These figures clearly demonstrate that the City has adequate residentially zoned properties to allow for development well beyond this planning period. In fact, however, it is very rare for residential developments in Arcata to occur at the maximum build-out allowed by zoning. Few developers choose to construct buildings taller than two stories, even where zoning allows for buildings as tall as five stories. Few developers are interested in locating parking under buildings, although this is generally the most effective way of meeting the City's open space requirements. No developers have thus far chosen to use the density bonus provisions of City codes. These sorts of things are expected to change over time as land values continue to rise and it becomes more cost-effective to maximize the build-out of each site.

Using the GIS maps, the staff has compiled the following list of properties which might be considered to be the most significant sites for future

residential development. All of these are currently zoned, and can be readily served, to allow for residential development. Note that small, isolated properties were not included in the following analysis.

It should be stressed that these figures are based only on "raw land data" and do not include any consideration of potential geotechnical problems, right-of-way acquisitions, flood plains, or other characteristics which may tend to limit the development potential of specific sites. Because of these potential site limitations, the density calculations are reduced by 25%. Also, the last site listed, the Storre property in the Valley West area, is included even though it is commercially zoned because of Mr. Storre's plans for residential development.

Location: East side of Alliance Rd. at Janes Creek (AP# 505-091-01)
Size: 1.58 acres
Zone: 1.08 acre is R-MH; .5 acre is R-L
Typical Build-out: 23 x .75 = 17 units
Potential Build-out: 56 x .75 = 42 units
Owner or contact person: Joseph McCarty

Location: East side of L.K. Wood, South of Diamond Dr. (AP# 507-011-31)
Size: 2.4 acres
Zone: R-MH
Typical Build-out: 47 x .75 = 35 units
Potential Build-out: 119 x .75 = 89 units
Owner or contact person: Kurt & Kim Kramer

Location: Twin Parks area, South of Sunset Ave. (AP# 505-121-19 & 21)
Size: 9.56 acres (and AP# 505-131-14)
Zone: R-MH:PD
Typical Build-out: 191 x .75 = 143 units
Potential Build-out: 478 x .75 = 358 units
Owner or contact person: Franke Estate

Location: North of Mad River Hospital, South of "Lazy J" (AP# 507-291-32)
Size: 5.1 acres
Zone: R-M
Typical Build-out: 61 x .75 = 46 units
Potential Build-out: 153 x .75 = 115 units
Owner or contact person: Mad River Properties

Location: Boyd Road, South of Guintoli Ln. (AP# 507-301-25)
Size: 10.4 acres
Zone: R-MH
Typical Build-out: 208 x .75 = 156 units
Potential Build-out: 520 x .75 = 390 units
Owner or contact person: Betty Sweaney / Robert and Glendine King

Location: West side of St. Louis Rd. (AP# 507-091-31 and 505-012-01)
Size: 20.76 acres
Zone: R-M:PD
Typical Build-out: 248 x .75 = 186 units
Potential Build-out: 621 x .75 = 466 units
Owner or contact person: Myrna Sorensen

Location: East side of St. Louis Rd. (AP# 507-071-04)
Size: 1.84 acres
Zone: R-M
Typical Build-out: 22 x .75 = 16 units
Potential Build-out: 55 x .75 = 41 units
Owner or contact person: Myrna Sorensen

Location: East side of St. Louis Rd. (AP# 507-071-19)
Size: 2 acres
Zone: R-M
Typical Build-out: 24 x .75 = 18 units
Potential Build-out: 60 x .75 = 45 units
Owner or contact person: Dan and Stephanie Steffen

Location: East side of Union Ave., South of Bayside Rd. (AP# 503-460-04)
Size: 5.1 acres
Zone: R-M:PD
Typical Build-out: 61 x .75 = 46 units
Potential Build-out: 153 x .75 = 115 units
Owner or contact person: True Dolson Hoyle

Location: -West side of H St., South of 12th St. (AP# 21-091-03, 04, 05)
Size: .55 acre
Zone: R-H
Typical Build-out: 25 x .75 = 19 units
Potential Build-out: 44 x .75 = 33 units
Owner or contact person: Edward and Elaine Rowan

Location: East of Wyatt Ln., South of 27th Ave. (AP# 507-341-26)
Size: 3 acres
Zone: R-L
Typical Build-out: 12 x .75 = 9 units
Potential Build-out: 21 x .75 = 16 units
Owner or contact person: Pentecostal Church of Arcata

Location: East side of Wyatt Ln., South of 27th Ave. (AP# 507-341-01)
Size: 2 acres
Zone: R-L
Typical Build-out: 8 x .75 = 6 units
Potential Build-out: 14 x .75 = 10 units
Owner or contact person: Carl and Charlotte Pfeiffer

Location: East end of 30th St., east of Alliance Rd. (AP# 507-092-07 & 13)
Size: 3 acres
Zone: R-L
Typical Build-out: 12 x .75 = 9 units
Potential Build-out: 21 x .75 = 16 units
Owner or contact person: Richard and Carol Laursen

Location: Between Valley West and Valley East Blvds. (AP# 507-301-63)
Size: 7.6 acres
Zone: GC:PD
Typical Build-out: 342 x .75 = 256 units (at R-H densities)
Potential Build-out: 608 x .75 = 456 units (at R-H densities)
Owner or contact person: Phil Storre

All estimates of typical and potential units are "net" figures. Total of units shown above:

Typical Build-out: 962 units

Potential Build-out: 2,192 units

Other potentially significant residential developments/areas include:

- * 7.4 acres along Grotzman Rd. which is zoned R-M and appears to have 13 existing dwelling units. Typical development could result in a net increase of 76 units, with the potential development totaling a net increase of 209. Lack of public street access is likely to be the major factor limiting the development of this area.
- * Two projects have been only partially built to date:
 - a. Nordström's apartments along Old Arcata Rd. at Grotzman Rd. Only 14 units have been completed. 33 additional units are ready for construction.
 - b. The Aldersprings development along Hidden Creek Rd. is approximately half built. 24 more units have been approved for construction.
- * The City also expects 20 to 30 single family dwellings and an equal number of second units built at scattered locations around the City each year. This is separate from any planned zone changes or annexations.

Sites for Potential Conversion from Industrial to Residential Zoning

As part of the implementation of the 1985 Housing Element the City considered rezoning a number of properties, including several that were previously zoned for industrial use. As a result of that process, the zoning of some of those industrial areas was changed at that time.

The following list includes industrial sites which are now considered to have potential for rezoning. It should be noted, however, that the previous industrial users may have left the sites in need of environmental clean-up before these properties can be converted to residential use.

- * *Beaver Lumber/Little Lake Industries site* - 11 acres, south of Samoa Boulevard. The City continues to receive inquiries from people interested in rezoning this property for residential development of more than 200 units. Issues to be addressed include: traffic connections with Samoa Boulevard; noise from adjoining industries; riparian habitat area; development impacts on adjoining wildlife sanctuary; and utility extensions. It is not known whether this site will be deemed appropriate for the proposed development as environmental review is still being conducted. If it is converted to residential zoning, a

reasonable percentage of the units should be available to households of moderate, low, and very low incomes.

- * *Universal Forest Products site* - 20 acres, south of Vaissade Road, at V Street. The City has received applications for annexation and rezoning of this site to allow for low density residential use, totaling approximately 100 primary units with an equal number of potential second units. Issues still to be addressed include archaeological research, impacts on adjacent farm operations, traffic, and utility extensions. If this site is approved for residential development, an adequate number of units should be made affordable to very low, low, and moderate income households.
- * *St. Louis Road area* - This area of about 13 acres includes a variety of old mill sites and other industrial properties. The City has begun to receive inquiries about the potential for zone changes in this area. It appears that approximately 8 acres could be converted to residential use if site clean-up, noise, and conflicts with continuing industrial operations, among other things, can be mitigated. The proximity of this area to Humboldt State University, and its relatively poor industrial access, both support the conversion.
- * *M Street Area* - This area includes about 1.5 acres in two ownerships between M and N Streets, and 11th and 14th Streets. Another former mill site which now appears to have more potential for residential development than for industrial use. It has development constraints which are similar to those of the other industrial sites listed here. If converted, it could provide 50 or more housing units.
- * *Cascade Forest Products site* - This site consists of approximately 5.85 acres along Foster Avenue (Bottom Road) west of Alliance Road. It also was previously a mill site. Another potential constraint facing the development of this property is its limited access. 17th Street connecting the site with Alliance Road is not adequately improved and lacks sidewalks. Eventually, Foster Avenue is planned to extend to the north of this site, thereby providing the necessary access improvements. Both the Cascade Forest Products site and the Specialty Lumber site (15 acres to the north which is already rezoned for residential development upon annexation) could be directly affected if the large Simpson Remanufacturing Plant property to the west is annexed and street improvements made. As many as 50 to 75 units could be constructed on the Cascade Forest Products property if the environmental and access issues are addressed and it is rezoned for residential development.

Sites for Potential Upzoning from one Residential Designation to Another

- * *Rural-Residential (R-R) areas* - The City presently has more than 200 acres zoned (or rezoned, for the portion that is outside the City limits) in this category, including approximately 50 acres which could be rezoned to Low Density Residential (R-L) if various infrastructure improvements are made. Most notable of these is the area in the northwest part of the community along Spear Avenue and west of Alliance Road. From forty to sixty additional residential lots could be created in this area if the lack of a storm sewer, and in some cases sanitary sewer, could be resolved. In fact, the expense of these facilities

appears to outweigh the financial benefits of additional development for many of the affected property owners. The Housing Element includes a commitment to support the rezoning of Rural Residential sites to Low Density Residential if impacts on surrounding resource lands are adequately addressed and all necessary public facilities and services are provided.

A relatively small area of R-R zoning remains within the built-up neighborhood south of 11th Street, west of A Street. This property has development constraints created primarily by nature. These include some steep slopes, Campbell Creek running through the property and the Alquist-Priolo Special Study Zone designation of the site. This combination of factors limits the development potential of this area to only a portion of its already small area. Some additional units can probably be expected to be built in the future, but the number is not likely to be significant.

In other areas, the large minimum lot size of the R-R zone is the density preferred by the majority of the owners and can, therefore, be expected to remain in place for some time.

- * *Low Density Residential areas.* Only two other relatively small areas, which are presently zoned R-L, are regarded as having potential for upzoning. These are a site of about one-half acre along Eastern Avenue, south of Sunset Avenue, and a number of small ownerships along Eye Street and Todd Court, north of Sunset Avenue. In both of these areas a change to medium (R-M) or medium-high (R-MH) density could be reasonable, provided that the Planned Development Combining zone is also used. Also, the area along Todd Court should not be upzoned until street improvements have been assured.

Other Sites for Potential Residential Redevelopment

The Central Business District (CBD) and the property within the Master Plan area of Humboldt State University are both areas which are expected to contribute significantly to the City's housing stock. The University is expected to house more than 900 additional students on-campus before the year 2000. The CBD is expected to undergo a gradual increase in housing development, primarily, but not exclusively, upstairs from commercial operations. Over the next five years from 20 to 50 additional housing units are expected to be built in the CBD.

Sites for Potentially Higher Densities Through Revised Development Standards

Changes to the City's development standards, including some which have recently been adopted and others which are proposed to implement the new Housing Element, are expected to result in the construction of a substantial number of new residential units. These are listed below in terms of the zones where they apply.

- * *Industrial-Commercial (I-C) properties.* The City recently amended the development standards of I-C zones to allow a limited amount of residential development which was previously precluded. Residential development is still expected to be a relatively minor use of I-C properties, and only 10 to 20 residential units are expected to be added

to these areas during the next five years as a result of this change.

* *General Commercial (G-C) properties.* The City is now proposing to amend the text of the G-C zones in the same manner as was used in the I-C zones. Also, it is proposed that residential units above commercial space be permitted outright, rather than continuing to require a use permit for such developments. A total of approximately 5 to 10 units are expected to be added in the next five years as a result of these changes.

* *Residential properties.* The City is proposing to make numerous changes to the development standards of various residential zones, affecting properties throughout the City. Listed separately in the "Action Plan" portion of the Housing Element, they could result in the addition of several hundred more housing units in the first five years after adoption of the new Housing Element. It should be stressed that not all of the proposals of the Action Plan are expected to be implemented immediately and some may not be implemented until a future update of the Housing Element.

Conclusions -

The City of Arcata has sufficient readily developable property, zoned for residential use, to accommodate residential development to meet the City's share of Regional Housing Needs. In fact, it appears that the implementation of the Housing Element, with the anticipated use of density bonus provisions of state law, will assure that the City has adequate residential property for projected development until well beyond the year 2000.

EMPLOYMENT AND POPULATION PROJECTIONS

Employment

Employment and population projections play an obvious part in planning for a community's housing needs. If a major employer is leaving a community, housing vacancy rates can be expected to increase. If a major new employer is moving into an area, the opposite effect can be expected.

The types of employment available also affect housing because of the income levels of workers. Not long ago the timber industry employed many more people in the Arcata area than it does today. Housing prices were relatively low and a mill worker could expect to make enough money to afford to buy a house and support a family. Today, and predictably in the future, there is a high unemployment rate among those in the timber industry, many mills have shut down and will not reopen, and housing prices have risen to the point where a declining percentage of those who are employed in the timber industry can afford to buy a home.

Moreover, employment patterns in Arcata, like those of much of the rest of the country, are shifting away from manufacturing and into the service sector, with a resulting decline in income. A crisis is inevitable: wages are declining as housing costs continue to rise.

Arcata has done a better job than most small communities of diversifying its employment base. A number of "micro-industries" have started and grown into major local employers in the last twenty years. Such businesses as Yakima (car top carriers), Holly-Yashi and Tomas (jewelry), Kokotat (white-water clothing) and others have proven that start up companies can develop and thrive in Arcata.

The City continues to promote such new businesses. It has done this through the use of redevelopment funds to improve public facilities such as streets, and sewer and water lines in industrial areas. Also, the City has constructed an industrial park which is now seeing the growth of a variety of small businesses. This includes City sponsorship of a "business incubator" for food processing companies that are starting up and assistance to a day care center to serve people working in the area. The City has sold land in the industrial park with a price reduction of \$1000 for each new job created, thereby stimulating local employment.

With all of these things in mind, the community will have to remain constantly vigilant for additional employment opportunities over time. No single major employers are expected to move into the area in the foreseeable future. No infusion of "high-tech" dollars is expected to spur the local economy. Rather, Arcata will continue to do what it has been doing: encourage diversification in a variety of small businesses with a focus on numbers and wages of employees, and products which are sold outside of the area, thereby "importing" dollars.

One employment trend that is expected to have a growing effect on Arcata is the increasing use of computers with modems to define work locations. More and more people, in some cases whole businesses, are now conducting some or all of their work through the use of these electronic tools. This gives the worker the freedom to choose a workplace, without necessarily requiring a location in an urban area. Some of these workers are beginning to relocate to the Arcata area.

The City has not seen any indication that whole companies, such as the insurance companies that have begun to relocate to communities in the foothills of the Sierra Nevada Mountains, are considering Arcata as a business location. If this happens in the future, it will have obvious impacts on the local housing market.

The housing implications of the City's employment projections are not expected to be significant. In general, housing prices are expected to continue to increase over time. Without some sort of assistance, the ability of local workers to afford housing will continue to decline.

Population

The population of Arcata has increased gradually through the years, growing at a much slower rate than the population of the State. It is the rapid growth of the Bay Area and southern California that contribute to the local growth. This is because much of Arcata's population growth results from immigration as people seek to escape from the problems of the State's more urban areas.

Many of these "urban refugees" arrive with a large bank account, having sold a residence in an even more highly inflated housing market. In many cases they desire an expensive house in order to avoid capital gains taxes. They have an obvious advantage over local people in the competition for housing.

In other cases, the urban refugees arrive with no significant amount of money to invest in housing. They compete with local people for a limited number of jobs and for a limited number of housing units. Sometimes these people stay and become part of the community. Sometimes they stay only a short time and then move on. There are always many others who will repeat the pattern.

As noted in the Section of the Housing Element dealing with Constraints to Housing Development, Arcata does not have the physical ability to accommodate the numbers of people who would apparently like to relocate here. Outward growth is approaching the physical limits created by flood plains, steep slopes, geologic hazards, prime agricultural lands, and wetlands. Although the City is some years away from the time when every developable lot has been used, the limited supply of land is already having an effect on price.

As unpopular as the idea may be, Arcata will eventually face the situation where virtually the only growth will be vertical or through the redevelopment of existing buildings.

Population growth tends to occur in cycles. Straight line projections and regression models rarely predict the true patterns of growth which may increase by five percent for three consecutive years, decline for two years, and then increase again at a different rate. For the last several years the City has used population projections which show a gradually declining rate of growth into the 21st century. Although this method does not predict the cycles of growth that are most likely to occur, it does reflect the effect of the development constraints noted above.

The population growth rate already contained in the General Plan (approximately 1.5% per year for the next four years, declining to 1.3% for each of the six following years) generally supports the projected number of new housing units to be constructed (634) during the five year Action Plan of this Housing Element. If the more significant proposals contained in the "Action Plan" portion of the Housing Element are adopted, the City's population could increase by as much as 2% to 3% per year during the next five years. The Regional Housing Needs projections for Arcata have been based on the assumption that the City's population growth rate will increase in the next few years. While the City does not consider this to be likely, the Housing Element assures that adequate opportunities exist for this level of growth.

URBAN RESERVE AREAS

The City of Arcata has identified two areas which are outside of the present City limits, but which are potentially significant in terms of housing development in the City. State law does not require the City to plan for such unincorporated areas, but it would be foolish for the City to ignore them.

The two areas in question are considered "urban reserves" for planning purposes. They are the Pacific Manor Subdivision, west of Janes Road, and the Simpson Timber Remanufacturing Plant, off Foster Avenue. The two have very different characteristics.

PACIFIC MANOR

This residential subdivision consists of 177 lots, each with an existing single family dwelling. Only five of the lots have been annexed to the City, leaving the remaining 172 under County jurisdiction. The area is served by City water but continues to use septic systems for sewage disposal. Area residents have considered annexation in the past but were discouraged by the high cost of extending and connecting to the City's sanitary sewage system; a cost that the property owners in the area would have had to bear.

The relatively large lot sizes, averaging about 8,000 square feet, makes the area a probable location for an abundance of future second units. Conversion of some of the units to day care (for adults or children) or board and care operations is also likely after annexation.

At this point it is difficult to estimate when the area might become part of the City of Arcata. The existing road network has begun to deteriorate in recent years. Residents may eventually choose to accept the expense of sewer connection and complete repairs to the roads as part of the same project. It seems doubtful that the area will be able to continue on individual septic systems forever.

SIMPSON REMANUFACTURING PLANT

This site consists of approximately 250 acres, some 200 of which have a history of industrial use, with the remainder in agricultural use. The redwood milling operation which once flourished there has now been out of business for some time and the Simpson Company is actively attempting to market the property.

Both Humboldt County's existing zoning_x and the City's prezoning_x of the property anticipate that most of the site will remain in industrial use. Recently, however, the Simpson Company commissioned the preparation of an innovative mixed use master plan for the property. Although not formally filed with the City, this master plan was believed to include more than 1,000 dwelling units of different kinds, along with commercial, industrial, public and agricultural uses.

Because of its size, location (in an area that is virtually surrounded by agriculture), and potential for mixed use development, the Simpson property may be the single most important area in the community's future development. If it is to be annexed and developed to City standards, and if the development includes housing, several things should be required:

1. It should be a mixed use development, providing housing at different densities and price ranges and sites for shopping and employment by residents;
2. It should include recreational sites within walking distance, and with easy access from all housing areas;
3. It should address potential impacts on surrounding farm lands;
4. It should include access improvements for vehicles, pedestrians and bicyclists, between this site and the developed area of the City; and
5. Development of the site should be based on a specific plan or other comprehensive master plan for the entire site, rather than occurring in a piecemeal and uncoordinated manner.

Action Plan for Housing Development

State Housing Element Law requires every city and county to include a five-year Action Plan within its Housing Element. The following list of "proposals" represents the action plan proposed by the City of Arcata. Most of the proposals can be implemented immediately after the adoption of the new Housing Element as amendments to the City's Land Use and Development Guide. Where a longer period of time will be required for implementation, it is noted in the discussion of the proposal.

The contents of this Draft Action Plan should be regarded as a "menu" from which the City's Planning Commission and City Council may choose to select some or all of the proposals. It has been structured to allow as much flexibility as possible in the decision-making process. This flexibility will also allow the City some different options in responding to comments from the public, other agencies, or the State Department of Housing and Community Development. It is possible that proposals within this Draft that are not implemented at this time will be considered again at the time of the next periodic review of the Housing Element, in about five years.

As a trade-off for an inclusionary zoning system through which developers will be required to provide housing, or fees in lieu of housing, for lower income persons, a number of density bonus proposals have been included. These are based on the goal of balancing the number of required units and lots for lower income people with a corresponding increase in allowable densities.

The proposed implementation measures have been divided into the following five categories:

- I. Proposals to increase housing opportunities in general;
- II. Proposals to increase housing opportunities for the handicapped and elderly;
- III. Proposals to increase housing opportunities for persons with moderate, low, and very low incomes;
- IV. Proposals to create housing opportunities for the homeless and those at risk of homelessness;
- V. Proposals to assist large families, female-headed and single parent households;
- VI. Other recommended actions; and
- VII. Other policy considerations.

The time-line for the implementation of the Action Plan is as follows:

Discretionary land use applications (generally, those involving public hearings) become subject to review for conformity with the Housing Element immediately upon its adoption.

The implementation steps which require the adoption of amendments to local ordinances (i.e., the Land Use and Development Guide) are expected to be implemented within four to six months.

Those measures which will require long-term planning programs, such as the adoption of mixed-use zoning in certain neighborhoods, are expected to take two to five years, depending upon available staffing.

The implementation of the Action Plan is essentially a process through which City staff prepares the necessary documents and reports for action by the City Planning Commission, City Council, and Community Development Agency Board. Where implementation is dependent upon additional funding, such as in proposal I-H, the staff will provide information on financial options but no specific development actions are expected until funding becomes available. Note that the State's recent actions, taking funds from local government to balance the State budget, make such local funding of public facility improvements all the more difficult.

In its review of the Draft Housing Element the State Department of Housing and Community Development requested more detailed information about existing City housing programs. The following is included in response to this request:

1. *Assistance to developers...* City Community Development Department staff and the staff of the Arcata Economic Development Corporation (AEDC) provide this assistance. Note that City staff reserves Tuesday afternoons to meet with developers and assist them with specific requirements.
2. *Mortgage subsidy or downpayment assistance programs...* Such programs are expected to be implemented following the adoption of the Redevelopment housing strategy. Community Development and AEDC staff share responsibility. Funding should be available by July, 1993.
3. *Encouragement of limited equity cooperative housing...* This also is part of the Redevelopment strategy. Community Development and AEDC staff will be involved. Completion of another such development is expected to take until mid 1994.
4. *Perpetual funding of rehabilitation program...* Receipt of additional Community Development Block Grant funds will be needed to implement this. Completion of an updated housing conditions survey (the last one was done in 1989) may be required before more rehab funds are sought. A Planning/Technical Assistance grant will be sought in 1993 to fund the survey. Rehab grant funding will be sought in 1994.
5. *Complete review of Land Use and Development Guide...* The first phase of this project will be completed with the implementation of the Housing Element, with hearings on the Code changes to begin by July, 1993. The second phase will await the completion of a complete General Plan review which has already begun and is expected to take three to four years.

I. PROPOSALS TO INCREASE HOUSING OPPORTUNITIES IN GENERAL

Proposal I - A

- A. In residential zones, allow for a system of lot size averaging to replace minimum lot sizes in subdivisions and lot line adjustments:

zone	current minimum lot size	proposed average lot size
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R-R	21,780 sq. ft.	20,000 sq. ft.
R-L	6,000 sq. ft.	6,000 sq. ft.
R-M	6,000 sq. ft.	6,000 sq. ft.
R-MH	10,000 sq. ft.	6,000 sq. ft.
R-H	10,000 sq. ft.	4,000 sq. ft.

- * In R-L zones, specify that no lots smaller than 4,000 square feet will be created.
- * Allow for exceptions where the developer proposes condominium units or alternatives which meet the overall goal of housing diversity in the subdivision.
- * Require small and large lots to be intermixed throughout developments to prevent segregation of expensive from inexpensive homesites. Allow clustering of small lots where that provides the best overall subdivision design.

Anticipated impacts of proposal I - A:

1. The City will no longer specify a minimum lot size allowed in each zone. Instead, developers will begin to intermix larger and smaller lots. Integration of expensive and inexpensive homes will occur within the same neighborhoods.
2. More flexibility in design will be achieved. "Cookie cutter" subdivisions (i.e., those where all the lots tend to have the same size and shape) will no longer occur.
3. Smaller lots are expected to be available for smaller homes at prices below those of larger lots.
4. Reduction of lot sizes for multiple family developments will allow for the development of 4-plexes, which are easier to finance through conventional residential loans than larger projects.
5. The number of second units to be constructed may be reduced, especially on smaller lots.
6. The City will need to modify the current Code language which allows nonconforming small lots to use the open space standards of the next higher density zone. A new system is proposed as an amendment to the

Land Use and Development Guide (LUDG) section on Nonconforming Lots which allows for a slight reduction in required open space for very small lots.

Proposal I - B

- B. If it is demonstrated that safe and adequate parking can be provided, allow for residential subdivision design with no specific minimum lot width or depth-to-width ratio.

Anticipated impacts of proposal I - B:

1. Greater flexibility in the design of residential subdivisions will result. Smaller lots will be created in new subdivisions. New small lots will be created in older developed areas of the City which currently have large lots.
2. Some small homes will be created to fit on narrow, small lots.

Proposal I - C -

- C. Where a second unit is proposed on an F-H or R-R lot, give the developer the option of either using the current 2:1 floor area or applying for a use permit to waive the floor area requirement in favor of a maximum floor area ratio of 20%. Duplexes shall be listed as permitted uses in R-L zones on lots of at least 8,000 square feet.

Anticipated impacts of proposal I - C:

1. By specifying the proposed floor area ratios in these situations a pattern of developing duplexes in single family neighborhoods will be avoided in F-H and R-R zones. Duplexes will be permitted in R-L zones only on the largest lots. The use permit process also will require developers to justify the construction of second units without meeting the current 2:1 floor area standard.
2. The proposed use permit process will provide another development option for the owners of lots with an existing small unit who lack the wherewithal or desire to construct a second unit having twice the square footage of the existing unit.

Proposal I - D

- D. Amend Section 1-0222.4 of the LUDG to provide that open space may be counted at 100% of its actual area, including the area of slopes, wetlands, etc, in planned developments. Specify that this approach will only be available to developers who propose design features which enhance or assure protection of the resources.

Anticipated impacts of proposal I - D:

1. This proposal will result in an increase in density, when compared to that anticipated under current standards, for those properties containing wetlands, creek zones, and steep slopes. It is not intended to allow for a net increase in density beyond that which would typically be allowed by the underlying base zoning. It is intended to provide an incentive to developers to use environmentally sound designs in these areas in order to avoid a reduction in the permitted density. These designated resource areas and hazardous locations will remain as open spaces, but the numbers of units permitted adjacent to these open spaces will increase.
2. Some potential impacts on wildlife and vegetation can be expected to occur as a result of increasing residential densities in close proximity to these resources. These impacts are expected to be minimized or mitigated by the design features of the development; otherwise the existing provisions will continue to apply.

Proposal I - E -

- E. Amend appropriate sections of the Land Use and Development Guide to support the fact that residences and businesses are not necessarily incompatible neighbors.
 1. The City recently amended LUDG standards to allow residences in Industrial-Commercial zones, subject to specific findings. The same approach should be used to increase the flexibility of the standards in other areas.
 2. Assure that people choosing to live in mixed use neighborhoods understand that there are unavoidable impacts associated with the commercial or industrial operations of their neighbors. The applicant/developer of such residential projects should bear the burden of proving that an adequate notification system is in place for both purchasers and renters of residential properties in commercial or industrial districts.
 3. Allow for mixed uses in more zoning districts without lengthy public hearing processes.
 4. Amend the standards of the Planned Development combining zone to clarify that the scope of review will vary with the extent to which the developer proposes uses or designs which would not ordinarily be allowed within the underlying base zoning. For example, a planned development permit for a project which would be permitted outright under the base zoning should be reviewed only for design suitability, while a project which proposes uses which are not listed as permitted or conditional in the base zone should bear a considerable burden in justifying the project.

5. Expand design criteria, including specific features, to help mitigate potential mixed use conflicts. Provide policy support for the Design Assistance Committee to reject design proposals which do not meet the criteria. Note that this is regarded as a long-term implementation project which may not take effect immediately upon adoption of the Housing Element.

Anticipated impacts of proposal I - E:

1. Residential units constructed in commercial or industrial areas can be expected to be exposed to different environmental impacts than those in residential areas. Things such as noise and traffic can be expected to have greater impacts. One undesirable result of this pattern could be a situation where poorer people are forced to live in commercial or industrial areas while those with more money live in areas which are exclusively residential.
2. The City has established a set of criteria for the development of housing within Industrial-Commercial zones which can also be applied to other nonresidential zones. This criteria should be sufficient to minimize nuisance complaints about commercial or industrial operations. It should also be sufficient to prevent the conversion of large portions of these zones to residential use.
3. A positive result would be to provide housing within walking distance of jobs. This could mean fewer cars and less energy consumed in transportation.

Proposal I - F

- F. Clarify that developments in R-M, R-MH, and R-H zones are required to meet minimum, as well as maximum, standards for density. When a developer proposes to build residential units at less than the minimum density standard, assure that the design will allow for the construction of the minimum number of additional units in a future phase of the development.

Anticipated impacts of proposal I - F:

1. This proposal will help the City to assure that housing goals and policies are met over time by preventing land which is zoned for higher density development from being consumed by lower density uses.
2. A reduction in design flexibility will result as developers will no longer have the option of constructing a single family dwelling in the middle of a parcel zoned for higher density use, unless it can be shown that the required number of additional units can still be constructed on the site.
3. This proposal should result in a slight reduction in the number of variance and "zero lot line option agreements" applied for over time because developers will have to consider the ultimate build-out of lots at the time of initial development.

Proposal I - G

- G. Specify that the "building group yard requirements" of the Code do not apply in commercial zones and other areas where separations between buildings are not normally required .

Anticipated impacts of proposal I - G:

1. No significant impacts are expected to result from this proposal. It has been liberally interpreted in the past and the proposed change would bring the language of the Code into conformity with past practices.
2. No increase in the number of units is expected to result. It should be noted, however, that a strict interpretation of the existing Code language could result in a reduction of residential densities permitted, especially in the downtown area.

Proposal I - H

- H. Prepare specific plans or special studies to create a mixed use zoning category that could be applied to the area along K Street, between 8th and 14th Streets, and along G and H Streets, south of Samoa Boulevard. This category would encourage a gradual conversion from the current industrial uses to light industrial, light commercial and multiple-family residential uses. The recent Code amendment allowing residential uses in Industrial-Commercial (I-C) zones, subject to special standards, was a first step towards the implementation of this proposal. The City will need to carefully define "light industrial" and "light commercial" for this purpose. Note that this proposal will take some time to complete and will not be implemented immediately after the adoption of the Housing Element.

Anticipated impacts of proposal I - H:

1. "Quality of life" issues will be raised because of noise and traffic in these areas. Note the lack of public parks existing to serve residents of each of the areas noted.
2. This conversion process will effectively remove some industrial land from the community's available inventory.
3. It will be necessary to verify that the existing infrastructure is adequate to serve the anticipated uses.
4. Sites which have previously been used for industrial purposes may have to undergo an environmental clean-up process before they are suitable for residential use.
5. Because of the scope of this change, it is considered to be a long-range planning item which will receive further study over the next few years, rather than being immediately implemented as part of this Housing

Element update.

Proposal I - I

- I. Review all areas presently zoned R-R for potential upgrade to R-L zoning. When adequate public facilities are provided to serve R-L densities, and adequate buffers can be provided between housing developments and resource areas such as forests or agricultural lands, the City will support rezoning from R-R to R-L. It is noted that these areas could also serve as potential density receiving locations if the City implements a Transfer of Development Rights program to preserve agricultural or other open space lands. If the City is going to implement a TDR system, it should be done as soon as possible to clarify the part that these properties may play in the process. *Note that, although an initial review of these areas has been completed, further study will be needed in the future before significant amounts of R-R zoned land can be upzoned.*

Anticipated impacts of proposal I - I:

1. A "review" of existing R-R zoned areas is expected to result in a change of the zoning of only a portion of the total R-R acreage. This review must note that R-R areas often serve as buffers for farmlands and they generally lack fully improved roads with sidewalks. In fact, there is a wide variation of characteristics among the different R-R zoned areas of Arcata. Each area should be evaluated separately, with special attention paid to infrastructure needs.
2. There is a significant increase in density possible between R-R (parcels of more than 20,000 square feet) and R-L (6,000 square feet) zones. Some residents of existing R-R areas prefer the rural feel of the larger lots and will oppose a change that could triple the density of their neighborhoods.

Proposal I - J

- J. Amend planned development and use permit criteria to allow for consideration of the overall or net community benefit of the proposal.

Anticipated impacts of proposal I - J:

1. While the impacts of proposed developments on specific neighborhoods will continue to be considered, the overall impacts (both positive and negative) on the total community will become the primary basis of reviewing development proposals.
2. No increase in the number of dwelling units is projected to result from this proposal. It should be noted, however, that the current approach may have the effect of preventing some applications for beneficial housing developments from being filed.

Proposal I - K

- K. Reduce open space requirement in R-R zones from 80% to 70% in order to encourage second unit development.

Anticipated impacts of proposal I - K:

1. This is a relatively minor change, but one which should assist property owners who frequently have sites developed to the current open space limit.

II. PROPOSALS TO INCREASE HOUSING OPPORTUNITIES FOR HANDICAPPED & ELDERLY

Proposal II - A

- A. Create a special density bonus system for residential projects where the units are restricted to occupancy by elderly or handicapped. Through the use permit process, allow the Planning Commission to determine the appropriate height, parking, density, and floor area ratio for the development. (Note that the terms "elderly" and "handicapped" will have to be defined for this purpose.)

Anticipated impacts of proposal II - A:

1. This proposal will result in more housing units being available for handicapped and elderly persons.
2. While this proposal allows for developments with parking standards below those of other housing projects, no parking problems should result because such residents are less likely to have cars than typical Arcata residents.
3. The City may need to localize the use of this proposal to areas along bus routes or within easy walking distance of commercial facilities, thereby assuring that the occupants can meet their needs without cars.

III. PROPOSALS TO INCREASE HOUSING OPPORTUNITIES FOR MODERATE, LOW, AND VERY LOW INCOME PERSONS

Proposal III - A

- A. Amend the density bonus system specified in the LUDG to assure that it meets the requirements of State law and provides a sufficient motivation to developers to provide housing for lower income persons. Include the following:
1. Allow for density bonus for the development of single family dwellings and other units developed at relatively low

densities, including those which are for sale. Assure that the resale price is regulated for affordability as required by State law.

2. Assure that the density bonus "schedule" in the ordinance is up-dated to reflect the permitted densities of each zone.
3. Encourage the use of the Planned Development system for these developments.
4. Assist developers with local, state, and federal housing programs, including redevelopment programs for applicable sites.

Anticipated impacts of proposal III - A:

1. The benefits of the density bonus system will be expanded to more potential buyers as well as renters. This will increase ownership and should help provide housing to families, especially those with limited financial resources.
2. Implementation of the Housing Element is expected to encourage developers to take the steps necessary to receive a density bonus. The result will be an increase in the number of units available for households with moderate, low, and very low incomes.

Proposal III - B

- B. Postpone the adoption of "inclusionary" zoning standards which require the provision of lots and housing units for moderate, low, and very low income households for at least three years. Assure that the standards of the Regional Needs Plan are met in terms of the percentages of new units which meet given price limitations. If the Regional Needs figures are being met after three years, another review will be conducted with the next update of the Housing Element, in approximately five years. The implementation of inclusionary zoning will continue to be postponed unless the City is unable to meet its Regional Needs requirements in the future. For a more detailed discussion of inclusionary zoning options see the addendum immediately following this Section.

Anticipated impacts of proposal III - B:

1. This proposal has been modified from the original Planning Commission recommendation that inclusionary zoning go into effect immediately. The City Council elected to postpone the implementation of inclusionary zoning after hearing from local housing developers who requested the opportunity to provide affordable units without the strict mandate of inclusionary zoning. The developers requested that the City amend the General Plan and zoning requirements in ways which facilitate the construction of lower priced housing. These changes have been included in the Housing Element and the implementing amendments to the Arcata Land Use and Development Guide which will follow. Most of the things requested by the developers had already been included in the Draft

Housing Element. In agreeing to postpone inclusionary zoning, the City Council made it clear to local developers that they will be expected to use the procedures and programs of the Housing Element to meet the percentage requirements for affordable housing contained in the Regional Needs Plan adopted by HCAOG. If the new housing developed between January, 1993 and January, 1996, does not meet those percentage requirements, the City will implement inclusionary zoning at that time.

2. Applicants for discretionary housing development approvals (e.g., zone changes, use permits, planned developments, subdivisions, etc.) will continue to bear the burden of proving that their proposed developments conform to the requirements of the Housing Element. This finding will be difficult to make, if the developer is not proposing to provide affordable housing.
3. Neighbors of proposed housing developments can be expected to be increasingly opposed to such developments because of concerns over the effects of adding lower income people to the neighborhood. Although predictable, this sort of "not in my back yard" attitude is diametrically opposed to the Goal of the Housing Element and State housing laws.
4. Developers are likely to increase the prices of some of their units in order to make up for profits lost by supplying other units at below market rates. This should not generally be a significant problem because of the density bonus provisions and creative development options provided as a result of the new Housing Element.
5. More developers will use the City's Density Bonus system which is triggered by the provision of below-market-rate units. In order to provide affordable housing units, more developers will take the steps necessary to receive the density bonus.

Proposal III - C

- C. Utilize the adopted strategy for the use of redevelopment funds which have been set aside for housing projects. Attempt to spread these funds through different types of projects serving different segments of the population. Note that this is proposal requires on-going implementation. Only part of this process will be completed within the initial five year period.

Anticipated impacts of proposal III - C:

1. This proposal is primarily intended to assure that the City does not use all of its housing set-aside funds on one type of project.

Proposal III - D

- D. Create a system which allows for mini-Planned Developments (through a procedure to be called "Alternative Development Options") in residential zones, where the site does not meet the minimum size requirements of the Planned Development standards. These projects

would be subject to the following standards:

1. If a mixed-use (not entirely residential) is proposed, require a conditional use permit to be reviewed by the Planning Commission;
2. If entirely residential, allow outright, regardless of lot size, subject to the following standards:
 - a. A minimum percentage of the units will be available for moderate, low or very low income buyers or renters;
 - b. Review by Design Assistance Committee;
 - c. Overall density or floor area ratio not to exceed that which would have been permitted on the site by zoning, had the site been vacant to begin with;
 - d. Floor area ratio for R-L zones to be not more than forty percent;
 - e. Exterior setbacks to meet normal zoning standards;
 - f. Open space, parking, and height requirements of zoning to be met.
3. Units created using this approach will not be allowed to subsequently be divided through the minor subdivision process unless all zoning requirements can be met.

Anticipated impacts of proposal III - D:

1. This proposal could significantly increase the flexibility of the design of small lot residential development, especially when combined with the proposal to allow lot size averaging. Developers would have the option of clustering units, building multiple units on single lots, or using conventional development patterns - provided that sufficient numbers of the units are available at below market rates.
2. Possible environmental benefits could result from this proposal by encouraging developers to "work around" features such as wetlands or riparian zones with no net loss of density.

Proposal III - E

- E. Add sections to the F-H and R-L zoning provisions which allow for subdivisions subject to the following standards, provided that a sufficient percentage of the lots will be available for moderate, low or very low income persons. These standards are intended to allow for such subdivisions without requiring the applicant to go through a Planned Development or variance process.
 1. Narrow streets, allowing for two narrow lanes, one-way loops, limited on-street parking, or other alternatives to

conventional street designs. Such streets should only be permitted where they are not intended to provide access beyond the subdivision, unless it is determined that access to a limited number of adjoining properties would create no serious traffic concerns;

2. Encourage the development of small private roads, provided that they do not serve properties beyond the subdivision;
3. Each dwelling unit to have at least two off-street parking spaces, with a reasonable number of spaces reserved for guest parking;
4. Allow for the use of pathways with alternative surfaces, on one side of the road, rather than concrete sidewalks (unless a pattern of sidewalks exists in the area and the subject development can continue the pattern).

Anticipated impacts of proposal III - E:

1. Residential densities in R-L zones developed under this proposal would increase by up to 33%, relative to current density limitations. The amount of impervious surface in roads and sidewalks will be reduced. Costs of infrastructure, per unit, would be reduced accordingly.
2. Creation of lots smaller than 4,000 square feet will result in fewer second units being constructed.
3. Narrow streets will result in lower traffic speeds but increase in congestion at peak use times. Potentially slower response for emergency vehicles unless street design is carefully controlled.
4. The City will need to regulate "homeowner associations" which are responsible for private road maintenance in order to assure emergency access.

Proposal III - F

- H. Include housing for lower income persons, among the "design features" of a Planned Development for which exceptions to the normal Code requirements are justified.

Anticipated impacts of proposal III - F:

1. A two-fold purpose would be served: the more creative design features which are typical of Planned Developments would result and more housing units for moderate, low, and very low income persons would be provided.

Proposal III - G

- G. Amend the text of the P-F Zone to make residential developments conditional uses.

Anticipated impacts of proposal III - G:

1. Arcata's P-F zones consist primarily of public and semi-public ownerships at various locations throughout the City. Few of these sites will ever be used for residential purposes.

IV. PROPOSALS TO CREATE HOUSING OPPORTUNITIES FOR HOMELESS AND THOSE AT RISK OF HOMELESSNESS

Proposal IV - A

- A. Amend the definition of "Group Quarters" in the LUDG to include accommodations for the homeless.

Anticipated impacts of proposal IV - A:

1. The City's current definition of "group quarters" precludes the development of homeless shelters to serve more than six persons by specifying that such quarters are not for transients.
2. Actual impacts of this change are expected to be minimal for two reasons: a) because a homeless shelter is expected to have no greater impacts on surrounding developments than other types of group quarters; and b) because it is not likely that funds will become available for a shelter of significant size in Arcata. It is noted that shelters serving fewer than seven persons are already permitted uses in most residential areas of the City.

Proposal IV - B

- B. Evaluate all City-owned property for potential use in serving the homeless, senior citizens and other groups with special housing needs.

Anticipated impacts of proposal IV - B:

1. No City-owned sites are expected to provide additional housing opportunities at this time. In the future, however, it may become feasible for the City to make available the "air space" above public parking lots for various kinds of development.

Proposal IV - C

- C. Amend the standards of the P-F (Public Facility) zone to list "emergency shelters" among the conditional uses.

Anticipated impacts of proposal IV-C:

1. By listing "emergency shelters" among the conditional uses of the P-F

zone the opportunities for future development of housing for the homeless, battered women, and other persons with special housing needs can be expanded.

V. PROPOSALS TO ASSIST LARGE FAMILIES, FEMALE HEADED AND SINGLE PARENT HOUSEHOLDS

Proposal V - A

- A. Amend zoning requirements for Day Care Centers to allow for the care of adults on the same basis as children. Include an amendment to the City's "fee resolution" to waive fees for applicants proposing to provide care for adults, in the same way as fees are waived for child care providers.

Anticipated impacts of Proposal V - A:

1. Adult day care for twelve or fewer individuals will be allowed in any residence, without requiring a special permit.
2. Day Care Centers, providing service to more than twelve adults, will be allowed on the same basis as centers providing care for children.
3. Persons providing care for elderly or disabled family members will have greater opportunities for respite or part-time care outside their home. This could be especially advantageous for single parent families where the care-givers currently have difficulty gaining the freedom to seek employment or perform other tasks outside the home.

Proposal V - B

- B. Amend the LUDG to assure that "Limited Day Care" applies to residential situations where care is provided to twelve or fewer persons, with "Day Care Centers" describing larger operations and those outside of the care-giver's own home.

Anticipated impacts of Proposal V -B:

1. This change will clear up some of the internal inconsistencies of the LUDG and will assure that the terms used in the local Code will match those of State laws.
2. This change is not expected to have any significant effect on the way applications have been processed by the City.

Proposal V - C

- C. Amend the Planned Development provisions of the LUDG to provide incentives for developers to include day care facilities within planned developments.

Anticipated impacts of Proposal V - C:

1. Planned developments which include day care facilities will be allowed to have slightly more lot coverage (less open space) and more floor area than planned developments which do not include these facilities.
2. This change, as with the other changes proposed to assist female-headed and single parent families, is not expected to directly affect the number of housing units available. Rather, it is expected to improve the living situations of those people.

Proposal V-D

- D. Amend zoning standards to encourage the development of housing for families at locations away from the University. Through the use of combining zones or other techniques, differentiate between the multiple family housing areas near the University and those away from HSU.

Anticipated impacts of Proposal V - D:

1. Small "efficiency units" will remain the primary housing type near the University but two, three, and four bedroom rental units will begin to be provided in other parts of the City.

VI. OTHER RECOMMENDED ACTIONS

Proposal VI - A

- A. Amend the parking standards of the Land Use and Development Guide to assure that adequate off-street parking is provided for new housing developments.
 1. For second units, require that a minimum of three off-street parking spaces are available to serve the two households;
 2. For single family dwellings, including those with second units, require two off-street parking spaces for the first 1,000 square feet of floor area and one additional space for additional 1,000 square feet, or portion thereof. Count spaces within garages and carports, as well as those in driveways immediately outside garages and carports, as meeting these requirements;
 3. For multiple family developments, require at least one off-street parking space per unit, unless the site is determined to be sufficiently close to the University to allow for a standard based solely on the square footage of the development;
 4. Increase the parking standard for other residential developments, excluding those in the Central Business District

or Landmark Historic Preservation Districts, to one off-street space for every 500 square feet of floor area. In calculating the number of off-street spaces for residential developments, round the number of required spaces up to the nearest whole number, rather than down.

Anticipated impacts of Proposal VI - A:

1. The total number of new housing units constructed over the next five years is expected to be reduced slightly by the implementation of this proposal.
2. The creation of additional parking problems will be avoided as densities continue to increase.

VII. OTHER POLICY CONSIDERATIONS

Note that all of the following things are policy issues which do not necessarily relate to specific actions. They should be considered to be part of the long-term implementation of the Housing Element. In some cases, they call for reconsideration of existing policies or programs. If the City subsequently concludes that additional changes to local ordinances are justified, those changes will need to be evaluated in greater detail at that time.

- A. Consider alternatives to the present open space requirements in residential zones. Note that "private" open space is not necessarily preferable to shared open space in housing developments. Reducing open space standards could require amendments to other General Plan Elements dealing with open space and urban design.
- B. Review hillside development standards to determine whether they adequately balance concerns about aesthetics, safety, environmental protection, and housing. Of particular concern are standards requiring home placement on the most level portions of hillside lots, when they might be better reserved for lawns and gardens. Also, the standards preventing residential construction on sites with slopes exceeding 15% should be considered in view of modern engineering capabilities which can allow for such construction on slopes of 25%.
- C. Consider the creation of special development standards for residential properties around the campus which are within the University's master plan. It may be possible to create standards which will assist the University without "taking" the property rights of the owners.
- D. Consider the use of fees-in-lieu of parking for any commercial area. The City Council may wish to consider a neighborhood-by-neighborhood view of this proposal, giving individual consideration to the parking problems of specific commercial locations.

- E. Consider a system that would allow a developer to present arguments for not adding off-street parking because of existing patterns of development and availability of adequate on-street parking.
- F. Lobby the State for additional on-campus housing development. Note the spin-off benefit of reduced parking problems around the University. Remind the State that it is not meeting its own adopted goals for on-campus housing. The City will continue to use the projections of the adopted Humboldt State University Master Plan to estimate the number of additional housing units which will be provided on campus. During the initial five year period housing for more than 500 students is to be provided on campus. The University is planning to eventually provide housing for 25% of its full time equivalent enrollment. This will mean an increase in on-campus housing of approximately 900 students (above the 1990 number).

ACTION PLAN ADDENDUM
ANALYSIS OF INCLUSIONARY ZONING ALTERNATIVES

In approving the Housing Element the City Council noted that the developers of housing in Arcata will be given every opportunity to provide affordable housing without the mandate of inclusionary zoning. If, by January, 1996, it is determined that new housing has not met the Regional Needs requirements for percentage of affordable units, the City Council has stated its intention to implement inclusionary zoning.

"Inclusionary zoning" refers to the practice of requiring residential developers to reserve a portion of each housing development for people of lower incomes. Such a system typically allows developers of small projects to pay a fee in lieu of actually providing the units. The fees are then used to create affordable housing.

The following information explains how inclusionary zoning may be implemented in Arcata in the future. It also compares the positive and negative features of two different inclusionary zoning alternatives with a system of incentives which could be used without inclusionary zoning.

-
Incentives to encourage the provision of affordable housing.

The primary incentive available to the developer of housing is the opportunity to increase densities. For example, a developer who would otherwise be limited to ten units on a given site could be allowed to build twelve units where two are reserved for occupancy by very low income residents.

Other types of incentives could include direct financial contributions (which could be implemented for developments within the City's redevelopment area through the use of housing set aside funds of the Arcata Community Development Agency), reductions in setback requirements, landscaping or parking standards, increases in allowable building height, or "priority" processing of development applications.

Inclusionary zoning alternative #1.

There are a variety of ways that the City could implement inclusionary zoning. The first alternative noted here would have the following features:

1. It would apply only to the construction of units and would not apply to land divisions;
2. Affordable units would have to be provided only when ten or more units are being constructed. For smaller developments of nine or fewer units a fee could be paid in lieu of reserving units for lower income persons.

Inclusionary zoning alternative #2.

The second inclusionary zoning alternative would have the following features:

1. It would apply to both the division of land and the construction of units. Property divisions of five or more lots and the construction of five or more units would trigger the requirement that lots or units be reserved for affordable housing.
2. Payment of a fee in lieu of providing affordable units or lots would be accepted only in cases where four or fewer lots or units are being created.

Anticipated impacts of inclusionary zoning alternatives.

As noted in the text of the Housing Element, the adoption of either of the inclusionary zoning alternatives outlined here is expected to mark a significant departure from past housing policies of the City of Arcata. Inclusionary zoning is still regarded as a new idea in this part of California, although it is now fairly common in much of the rest of the State. The following impacts are expected to result from either of the alternative types of inclusionary zoning being considered:

- A. The initial impact of implementing inclusionary zoning requirements is expected to be a chilling effect on new housing starts; some people may choose not to build rather than comply with the new requirements. This response is expected to be short-lived as the demand for housing in Arcata will encourage developers to construct additional units or create the additional lots. Note that many of California's more urban areas have had such requirements in effect for some years, with no significant impact on the total number of housing starts.
- B. Neighbors of proposed housing developments can be expected to be increasingly opposed to such developments because of concerns over the effects of adding lower income people to the neighborhood. Although predictable, this sort of "not in my back yard" attitude is diametrically opposed to the Goal of the Housing Element and State housing laws. It is also possible that the general public will prefer the dispersal of affordable units throughout the community, rather than having them concentrated at specific locations.
- C. Developers are likely to increase the prices of some of their units in order to make up for profits lost by supplying other units at below market rates. This would create a situation where those paying market rates will, in effect, be creating a subsidy for those in the affordable units. This situation increases the importance of implementing a density bonus system which allows developers to make a sufficient profit without increasing rents or sales prices for market rate housing.
- D. More developers will use the City's density bonus system which is triggered by the provision of below-market-rate units. If required to provide such units anyway, more developers will take the steps necessary to receive the density bonus.
- E. Any inclusionary zoning system which involves the collection of fees will require an administrative and accounting system to assure that the funds are properly collected, saved, and spent on affordable housing. The more complex the system that is put in place, the more staff time will be required to administer it.

Comparative impacts of different alternatives.

The following section lists some of the impacts of each of the alternative inclusionary zoning systems discussed above and compares them to a system that stresses only incentives for developers who provide affordable units. Such incentives are reviewed at length in the Action Plan of the Housing Element. It should be noted that the Housing Element stresses a mixture of incentives and inclusionary zoning as the most effective way of assuring that a sufficient number of affordable units are provided at varied locations.

Incentives only:

1. Will not assure that the affordable units are spread throughout the developing portions of the community. Such units will be provided only where developers feel sufficiently motivated by the incentives to provide the affordable units.
2. Incentive programs have had only limited success in most communities. Where the incentives have been sufficient, a significant number of affordable units have been provided. Typically, however, they have been provided only by a small percentage of the developers, at isolated locations. It is not likely that Arcata can meet its "regional needs" projections for very low income households by relying solely on incentives.
3. Will not be able to assure that the required quotas for affordable units in redevelopment areas are met.
4. A system which relies solely on incentives is expected to be considerably easier and less costly for the City to administer than an inclusionary zoning system.

Inclusionary zoning alternative #1:

1. Will result in affordable units being spread throughout the community more effectively than a system relying solely on incentives, but less effectively than inclusionary alternative #2. Alternative #1 will only result in affordable units in larger multiple family developments and will not directly provide affordable units in lower density situations. Some developers can be expected to build only small groups of units in order to avoid having to provide affordable units.
2. Will provide significantly more affordable units than the incentive system but is not expected to meet "regional needs" for very low income households.
3. Should be able to assure that the affordability requirements for housing within the redevelopment area are met.
4. Will require a long-term commitment of staff time to administer the program.

Inclusionary zoning alternative #2:

1. Housing for lower income persons will be dispersed throughout the developing areas of the community, rather than concentrated within any single neighborhood. While some communities have lost this perspective and allowed all developers to "buy their way out" of providing the units or lots, Arcata is proposing to limit the use of the fee in lieu approach to only those small developments and situations where the requirements would call for the provision of less than one unit or lot.
2. By requiring the provision of affordable lots as well as units this alternative will create opportunities for self-help housing and programs for first-time home buyers that would not otherwise exist.
3. Will assure that both "regional needs" and redevelopment requirements are met, including the needs of very low income households.
4. Will be expensive and time-consuming to administer. City staff will be required to be closely involved in all housing developments to assure that the requirements are met.

QUANTIFIED OBJECTIVES.

HCD has requested that the City provide estimates of the "maximum number of housing units, by income category, that can be constructed, rehabilitated, and conserved" over the five-year life of the Housing Element. The statute requiring this approach recognizes that the City may not be able to achieve its share of Regional Housing Needs projections within the planning period. It provides the City with the opportunity to justify numbers which do not achieve those of the Regional Needs figures.

The reference to units "conserved" caused the staff to contact HCD for a definition. We were instructed that conserved units are those which, for whatever reason, are available at below market rates which, will be prevented from conversion to market rates within the planning period.

QUANTIFIED OBJECTIVES UNITS 1/1/91 TO 7/1/97

<u>Income levels</u>	<u>New construction</u>	<u>Rehab.</u>	<u>Conservation</u>
Very low	258	5	176
Low	193	5	1
Moderate	198	5	0
Above Moderate	319	25	0
Totals	968	40	177

NOTE: These figures have been based on the adopted Regional Housing Needs Plan for Humboldt County. If that Plan is amended, the City is prepared to meet increased housing demands. Please see Section VI for a more thorough analysis.

HOUSING IN COASTAL ZONE

State Housing Element law requires separate consideration of housing activities within the California Coastal Zone. Unfortunately, the City of Arcata only began tracking housing starts within the Coastal Zone within the last year. A team of interns from Humboldt State University undertook the task of reviewing thousands of old building permit files and entering the pertinent information into the data base. This information has been tabulated and included here.

* Units approved for construction, 1/1/82 through 11/30/92:	38
* Units required for low/moderate income households:	0
* Low/moderate income units authorized for demolition:	0
* Required replacement units:	0

HOUSING ELEMENT POLICY PLAN

WHAT MATTERS:

- * Meeting the requirements of state Housing Element and Redevelopment laws;
- * Adequate sites to allow for enough housing development to meet Regional Needs requirements;
- * Affordable housing to be spread throughout community;
- * Increased opportunities for home ownership.

GOAL

It is the Goal of the Housing Element of the Arcata General Plan to provide housing opportunities for people of all income levels, through the development of a wide range of housing types.

POLICIES

Affordability and Fair Housing

The City of Arcata shall:

1. Assure that new developments provide a fair share of the Regional Needs of housing for persons of very low, low, and moderate incomes. This will recognize the needs of the elderly, the handicapped, female headed and single parent households, the homeless and those at risk of homelessness, families (especially large families), farmworkers, students, first time home buyers, and others. It is noted that the households with the lowest incomes tend to pay the greatest proportion of their incomes for housing and have the greatest need for assistance in securing decent housing.
2. Assure that housing for people in lower income groups is included within residential developments in all parts of the City, thereby avoiding the segregation of certain classes of people into specific neighborhoods. A combination of incentives will be used to implement this policy.
3. Encourage a wide range of public and private investment to help meet the City's Housing Goal. This will include leveraging funds from different sources, using redevelopment funds as "seed money" to encourage other investment or to provide infrastructure to serve needed housing development. The City will cooperate with and assist the County Housing Authority, the Arcata Economic Development Corporation, other nonprofit housing providers, state and federal agencies, and for-profit developers in efforts to implement this Housing Element.
4. Require energy efficiency in the design and construction of housing developments. The long-term economic and environmental benefits of

energy efficiency shall be weighed against any increased initial costs of energy saving measures. Energy efficiency includes adequate provision of bicycle and pedestrian access, thereby helping to meet the needs of those who cannot afford, or do not want, automobiles.

5. Continue to provide a housing rehabilitation program for lower income renters and homeowners. Rehabilitation is a cost-effective way of keeping the community's stock of affordable housing in safe and decent condition.
6. Continue to provide understandable information to the public about the City's policies, standards, and procedures for housing. Continue to encourage and support public involvement in decisions concerning housing.
7. Eliminate unnecessary discretionary review procedures and delays in housing development processes. Eliminate other review procedures or requirements which add, unnecessarily, to the costs of housing.
8. Support state and federal mandates for fair housing practices in terms of both public and private housing developments.

Design Standards

The City of Arcata shall:

9. Support innovation and creativity in construction techniques, design, property conveyances and types of development. Condominium, cooperative, and cohousing developments and planned developments shall be encouraged.
10. Provide opportunities for in-filling of vacant and redevelopable properties in a way that allows for gradual, rather than drastic, changes from surrounding development density or type. Design features such as gradual increases in building height, functional open space, well-designed landscaping and natural vegetation, breaks in wall and roof lines, building separations, and adequate off-street parking that is well screened can all help to minimize the impacts of increasing densities in established neighborhoods.
11. Recognize that the best interests of the overall community must, at times, outweigh the concerns of specific neighborhood groups. While maintaining the quality of life in Arcata remains of critical importance, the implementation of the General Plan will necessitate some actions which may be opposed by some individuals or groups as having an adverse impact on their specific neighborhood. "Not in my back yard" attitudes do not justify denial of needed housing developments.
12. Continue to regulate the rate of conversions of existing apartments to condominiums, assuring that an adequate stock of rental units remains available.
13. Assure that adequate off-street parking is provided for every residential development. Multiple family housing in the downtown area,

in designated historic structures and near the University warrants continuation of the special parking standards that are already in place. Housing at other locations should be subject to more strict standards of adequacy.

14. Continue to rely on the floor area ratio system of determining the allowable limits of housing developments near the University. Away from the University, a mixture of floor area ratios and limitations on the numbers of units per acre should be established for multiple family residential zones. This will help to encourage the construction of units for family occupancy.

IMPLEMENTATION MEASURES

The City of Arcata will take the following steps to implement the policies of the Housing Element:

- A. Expand the current incentives to developers for the inclusion of dwelling units, suitable for sale or rent to very low, low and moderate income families, within new residential developments. The City shall offer the following incentives:

- * Density bonuses;
- * Flexible zoning requirements through the utilization of planned development and other innovative standards;
- * Assistance with local, state or federal public housing programs;
- * Mortgage-subsidy or down payment assistance programs to assist first time home buyers and other qualifying households, when such funds are available.

Deed restrictions or other means shall be provided to assure that units developed for very low, low and moderate income persons remain available to households in those income categories over time, in compliance with state law.

3. The City shall continue to utilize the Subdivision Map Act to guide development. Section 66473.5 of the Act provides that no local agency shall approve a subdivision proposal which is incompatible with the objectives and policies of the General Plan, including its Housing Element. Therefore, a proposed subdivision must be evaluated not only on the basis of site adequacy or necessary physical improvements, but also on whether it conforms to General Plan policies, including housing policies which encourage creation of parcels for very low, low, and moderate income households.

- C. The City and the Arcata Economic Development Corporation, a private nonprofit corporation, shall maintain close liaison with appropriate federal and state housing assistance agencies. Opportunities for rehabilitation and rental assistance shall be sought through the Department of Housing and Urban Development. The HOME program and the Farmers Home Administration 515 program and other government programs

offer opportunities for new construction. The City shall actively monitor the progress of new state and federal housing legislation.

- D. The City shall encourage development of limited-equity cooperatives as a means of providing affordable housing. Under such an agreement, ownership is retained by a cooperative housing corporation which holds title to the housing units. People buy a membership share which gives them the right to occupy a unit in the cooperative. If they vacate the co-op, the share must be resold to the corporation for the original investment plus a limited amount of equity. Since the mortgage is held in constant ownership by the corporation, there are no transfer fees, real estate fees, profit or speculation costs in the sale of shares. Therefore, cooperative housing remains affordable over time and is a long-term solution to the rising cost of housing. Cohousing, and other creative housing alternatives shall also be supported if they help to meet the City's overall goal for housing.
- E. The City shall continue to contract with the AEDC, and/or other non-profit organizations, to promote economic development and affordable housing. AEDC offers low interest housing rehabilitation loans to both owners and renters. AEDC housing programs should be expanded to provide new housing to very low, low and moderate income people. AEDC also packages loans, works with other housing providers and assists citizens and developers in applying for local, state and federal housing programs.
- F. The City shall continue to support comprehensive energy conservation and maintain conservation standards and solar access regulations. The Solar Access requirements of the Land Use and Development Guide shall be expanded to apply to all housing developments consisting of more than one single family dwelling. The City shall continue to support other energy-conservation agencies and groups by coordinating their efforts in Arcata and providing the public with information on resources available.
- G. The City shall periodically review the Uniform Building Code and the Uniform Housing Code and adopt the necessary revisions so as to further local development objectives, including:
 - * The reasonable enforcement of standards in existing housing. For example, while items such as the provision of adequate emergency exits should certainly be enforced, others such as minor variations in permitted ceiling height could be excused if they impose no public safety hazard.
 - * Energy-efficient building design, such as orientation of the structure to maximize available sunlight and improving insulation to reduce heat loss.
 - * The use of innovative design, materials and building techniques in new construction.
 - * The City shall consider a local amendment to the Uniform Building Code to allow for the development of housing units having as little as 150 square feet of floor area, excluding kitchen and bathroom area.

11. The City shall continue its housing rehabilitation loan program, taking into account the different housing conditions and repair requirements in Arcata's neighborhoods and the financial constraints of persons on fixed incomes. The Arcata Community Development Agency, the City's redevelopment agency formed in 1983, must spend at least twenty-percent of its tax increment revenues for very low, low and moderate income housing. A goal shall be to create a funding level that will allow for perpetual rehabilitation of a stable number of homes each year. The program shall include:

Financial and Technical Support. The City shall maintain the revolving loan fund to make rehabilitation loans to local homeowners and landlords of very low, low and moderate incomes.

Support Services. The City shall also develop a program of support services, including:

- * Home-maintenance education programs for owners and tenants, possibly sponsored jointly by the City and Humboldt State University;
- * Requesting local lending institutions to provide rehabilitation finance counseling;
- * Coordinating of housing assistance from related programs and agencies.

Enforcement of Minimum Housing Code Standards. The City shall require that minimum housing code standards be met as a condition of participation in the City-sponsored housing rehabilitation program. To this end, the City has adopted the State Rehabilitation Code, which allows some flexibility in rehabilitation improvements. The correction of housing deficiencies shall focus on the elimination of basic health and safety code violations. Modernization of the property involving improvements to the building exterior, corrections of over-crowded conditions and similar considerations shall not be subsidized with public moneys. The cost of repairs which are passed on to tenants should tend to be confined to minimum code corrections, and not wholesale modernization which would generate major appreciation in property value.

Priority Lending for Historic Homes. The City shall continue to lend, on a priority basis, low-interest rehabilitation moneys to historically designated properties to encourage maintenance and rehabilitation, if income requirements can be met.

Residential Construction Tax. The Land Use and Development Guide shall be amended to clarify that the rehabilitation of buildings which increase the number of units without increasing the square footage is exempt from the City's Residential Construction Tax.

- I. The City shall undertake a complete review of the standards and procedures of the Land Use and Development Guide. Fundamental assumptions regarding setbacks, density regulation, parking standards and review procedures should be examined to determine if they are really necessary or merely accepted conventions. Development standards should be revised to allow for greater flexibility, logical consistency, usability, simplicity and innovation.
- J. The open-space requirements of the Land Use and Development Guide shall be used as a tool to influence design. For example, parking requirements for a housing development for the elderly could be decreased, perhaps in exchange for an increase in the provision of open space for senior citizens. By using flexible standards, a more pleasing living environment can be created. Specifically, cluster housing and townhouse design can be used to create contiguous areas of open space.
- K. The condominium conversion standards of the Land Use and Development Guide shall continue to limit the rate of conversions of existing apartments. Displacement of existing tenants shall be another determining factor in analyzing requests for conversion. The standards shall recognize the differences between condominiums and apartments in the need for such physical facilities as additional storage space, parking and laundry facilities. A subdivision map must be filed for the division of any land, including condominium and community apartment projects as well as traditional single-family developments.
- L. The City recognizes the high demand for additional housing as well as the environmental and economic constraints on designating additional land for development beyond the urban core. Therefore, the Land Use and Development Guide shall continue to allow for the construction or conversion of existing living space to allow up to two units in the R-R, F-H and R-L zones, provided that adequate setbacks, parking and open space requirements can be met.
- M. The City shall monitor the local housing market every March, collecting data from various housing agencies and programs to evaluate the effectiveness of housing assistance. By collecting data from landlords and tenants, greater efforts shall be made to monitor the rent structure and vacancy rates of local multi-family housing. Policies and implementation measures of the General Plan shall be reviewed periodically to take into account community needs. The Housing Element shall be updated as required by state law.
- N. The City will continue to use easy-to-understand Design Manuals, procedure outlines and graphics to explain City review processes and design goals. New Design Manuals should be created as needed for this purpose. A combined General Plan and Zoning Map shall continue to be used to prevent confusion between General Plan and zoning requirements.
- O. In addition to enforcing existing laws regarding handicapped access, the City should encourage developers to consider incorporating minimal changes in some new units which would make them more usable for the handicapped while not otherwise affecting their marketability. Examples of these minimum changes include three-foot-wide interior doors, grab bars, lower counters and ramped thresholds. The City should take an

educational approach through design manuals developed in cooperation with agencies providing services to the handicapped.

- P. In the next five years, the City should seek the development of a senior-citizen housing facility large enough to provide dining and socializing facilities. Such a development may have to be subsidized in order to be affordable. The Community Development Block Grant is one possible source of assistance. Cooperation with a private developer would be preferred over direct City ownership.
- O. The City's Department of Community Development shall continue to maintain a file for the purpose of recording information about any alleged violations of state or federal fair housing requirements. Anyone making such allegations will be provided with information on how to contact the appropriate state and federal offices to file complaints.

GENERAL PLAN MAP

Arcata's General Plan Map only has legal authority affecting properties within the City limits. Upon annexation, previously unincorporated properties become subject to City General Plan and zoning standards.

City zoning and General Plan map categories are the same. There are six residential categories, based on the desired density designations for different areas of the City. The designations do not specify a type of structure appropriate to any category, although there is a very general relationship between structure type and development density. A variety of development types could occur as long as they fall within the permissible minimum and maximum density, as measured on a parcel-by-parcel basis. It should also be noted that some housing will be provided in other than residential zones. Most notable of these is the Central Business District, where housing will continue to be encouraged to help maintain the vitality of the City center. The residential categories are described below.

Forest/Hillside (F/H)

Permits lots as small as approximately one-half acre in size in the less steep areas of Arcata's hillsides. Two dwelling units per lot are generally allowed for a maximum density of approximately 6 persons per acre of developable land. Newly created lots in this zone must contain a buildable area of sufficient size and flatness to allow development without significant environmental damage. The development regulations for the zone must balance protection of the sensitive hillside environment with the City's needs for quality housing sites.

Rural Residential (R-R)

Generally permits two dwelling units per lot, on lots as small as approximately one-half acre. An approximate density of up to 6 persons per acre is anticipated in the developed R-R areas. This zone is intended to protect the rural environment of such homesites and may also

help to provide a buffer between more dense residential developments and agricultural operations.

Low Density Residential (R-L)

Typical of the densities in existing single-family subdivisions, such as Bloomfield, Pacific Manor and Sunny Brae, approximately 20 persons per net acre are expected to occupy R-L areas. A maximum of two dwelling units would generally be allowed per lot. This is the predominant residential density designation on the General Plan Map.

Medium Density Residential (R-M)

Permits approximately 42 persons per net acre, and is representative of the densities found in mobile home parks, duplexes and low density apartments. This category includes both large vacant areas removed from central Arcata where low density apartments and mobile home parks are appropriate and developed areas where redevelopment or re-use at higher densities would be allowed.

Medium-High Density Residential (R-MH) and High Density Residential (R-H)

R-MH permits approximately 67 persons per net acre, and the R-H category permits approximately 88 persons per net acre; both are designed for multi-family residential developments. The Colony Inn on Union Street is an example of a medium-high density development, while the Humboldt Green is in the high density range. Medium-high and high density residential uses are designated in central Arcata to encourage a higher density than now exists; in some outlying areas, they are meant to allow for large-scale development proposals. The highest residential density is applied to several areas in central Arcata, to encourage more intensive re-use and redevelopment of existing commercial and low density residences.

HOUSING ELEMENT DEFINITIONS

CLUSTER DEVELOPMENT -

A form of residential development where the units are grouped or clustered in one portion of the total land area, with the remaining area left as open space.

DENSITY BONUS -

A form of "incentive zoning" where residential developers are granted permission to construct units at a density which exceeds that normally allowed in the zone. A density bonus is required by California State law (Section 65915 of the Government Code) for certain types of developments which provide units for lower income persons. The City of Arcata has also provided a density bonus system in its ordinance for residential planned developments.

FLOOR AREA RATIO (FAR) -

The gross floor area of buildings on a lot, divided by the total lot area. Arcata uses FAR as one method of regulating the build-out of residential properties.

HOUSEHOLD INCOME LEVELS -

- * Above moderate - Household income exceeding 120% of the median family income of the County.
- Low (also labeled "other lower") - Household income between 50% and 80% of the median family income of the County.
- * Moderate - Household income between 80% and 120% of the median family income of the County.
- * Very low - Household income at or below 50% of the median family income of the County.

PLANNED DEVELOPMENT (:PD) -

As used by the City of Arcata, this term applies to a system of "overlay" or "combining" zoning, used in conjunction with conventional base zoning. All developments in areas which have the :PD zoning are required to undergo a special review procedure. Planned developments which include special design features may receive exceptions to typical Code requirements for such things as density, floor area ratio, height limits and other standards. Planned development zoning is intended to encourage creative design.

SELF-HELP (or SWEAT EQUITY) HOUSING -

Housing constructed or rehabilitated by the owner-occupants. Self-help housing can meet the needs of lower income households because of reduced construction costs. In some cases, several families will work together to construct one-another's homes.

URBAN SERVICE BOUNDARY -

A mapped boundary, which may include property inside and outside of the City limits, beyond which the City does not plan to provide such services as water or sanitary sewer collection.

ZERO LOT LINE (OR ZERO SETBACK) -

The location of a building directly on a lot line, rather than being set back from the line. The City of Arcata allows the owners of adjoining private properties to enter "Zero lot line option agreements" for the development of structures on or near property lines.

ZONING -

* Exclusionary zoning - Zoning regulations which have the effect of excluding persons of lower incomes. Residential zoning which sets extremely large minimum lot sizes has been found to be illegal and exclusionary, especially where it reduces the housing opportunities of minority persons.

Incentive zoning - Granting of some special development opportunity, or limiting the typical development restrictions of a site, in exchange for the provision by the developer of some public benefit or amenity.

Inclusionary zoning - A system of zoning standards intended to encourage the development of housing for lower income persons. The term is used to describe development regulations which require housing developers to reserve a certain percentage of lots or units for lower income households, or to pay a fee in lieu of providing such lots or units.

RESOLUTION NO. 923-44

A RESOLUTION OF THE CITY COUNCIL OF THE
CITY OF ARCATA RESPONDING TO COMMENTS OF THE CALIFORNIA
DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT AND CREATING AN ADDENDUM
TO THE HOUSING ELEMENT OF THE ARCATA GENERAL PLAN.

WHEREAS, Resolution 923-32 was adopted by the City Council on January 6, 1993, adopting a new Housing Element of the Arcata General Plan; and

WHEREAS, City staff promptly submitted copies of the new Housing Element to the California Department of Housing and Community Development (HCD) for its review; and

WHEREAS, HCD responded to the City by letter dated May 7, 1993, requesting additional information, attached hereto as Exhibit A; and

WHEREAS, the City of Arcata has prepared a response to each of the questions asked and issues raised by HCD and that response is attached as Exhibit B;

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Arcata hereby approves of this response to HCD, making it an addendum to the Housing Element, and instructs the staff of the Arcata Community Development Department to attach this Resolution and the relevant exhibits to all copies of the Housing Element which are produced.

DATED: June 2, 1993

ATTEST:

APPROVED:

Alice Harris
City Clerk, City of Arcata

[Signature]
Mayor, City of Arcata

Clerk's Certificate

I hereby certify that the foregoing is a true and correct copy of Resolution No. 923-44, passed and adopted at a regular meeting of the City Council of the City of Arcata, Humboldt County, California, held on the 2nd day of June, 1993, by the following vote:

AYES: Blaser, Canning, Ornelas, Pellatz, Schaub

NOES: None

ABSENT: None

Alice Harris
City Clerk, City of Arcata

DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT
DIVISION OF HOUSING POLICY DEVELOPMENT1800 THIRD STREET, Room 410
O BOX 952053
SACRAMENTO, CA 94152-2053
(916) 323-3176 FAX (916) 323-6625

Exhibit A

May 7, 1993

MAY 10 1993

Ms. Alice Harris
City Manager
City of Arcata
736 F Street
Arcata, California 95521

Dear Ms. Harris:

RE: Review of Arcata's Adopted Housing Element

Thank you for submitting Arcata's housing element, adopted January 6, 1993 and received for our review on January 8, 1993. As you know, we are required to review adopted housing elements and report our findings to the locality (Government Code Section 65585(b)).

Our review was facilitated by a May 4, 1993 telephone conversation with Stephan A. Lashbrook, Director of the City's Community Development Department. The attached Appendix contains a summary of that discussion.

Arcata's revised adopted housing element addresses many of the concerns identified in our July 23, 1993 review letter. For example, it now includes a complete land inventory, quantified objectives for conservation and rehabilitation, and a complete analysis of land use controls, construction and land costs, and building codes and their enforcement.

However, revisions outlined in the Appendix, are still needed to bring the element into compliance with State housing element law (Article 10.6 of the Government Code). In particular the element should identify sites to facilitate the development of emergency shelters and include programs with specific implementation actions.

In order to assist local governments in implementing their housing programs, this Department will be allocating funds from the Home Investment Partnership Program (HOME), one of the new federal housing programs created by the National Affordable Housing Act. Local governments can use HOME funds to expand the resources available for housing rehabilitation, acquisition of

Ms. Alice Harris
Page 2

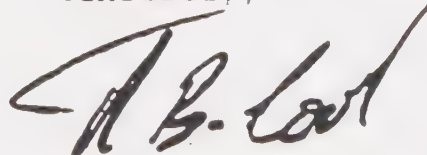
land and structures, tenant-based rental assistance, and under certain circumstances, new construction. As you are probably aware, Arcata is an eligible applicant for HOME funds. The next Notice of Funding Availability is scheduled to be released this summer.

This Department's HOME program regulations include housing element status as a rating factor in the competitive application process for HOME funds. Jurisdictions with an adopted housing element that is in compliance with State housing element law as determined by this Department will receive significant extra points if their application has met the threshold criteria. Points will be awarded to jurisdictions with an adopted housing element in compliance on or before the date HOME applications are due to the State. For more information on the HOME program, please contact Chris Webb-Curtis of this Department at (916) 327-3586.

We hope our comments are helpful to the City and we thank Mr. Lashbrook for his assistance during the course of our review. For technical assistance in revising your element or to schedule a meeting, please call Michelle Woods of our staff at (916) 327-8881.

In accordance with requests pursuant to the Public Records Act, we are forwarding copies of this letter to the persons and organizations listed below.

Sincerely,



Thomas B. Cook
Deputy Director

cc: Stephan A. Lashbrook, Community Development, City of Arcata
Spencer Clifton, Humboldt County Association of Governments
Kathleen Mikkelsen, Deputy Attorney General
Bob Cervantes, Governor's Office of Planning and Research
Dwight Hanson, California Building Industry Association
Kerry Harrington Morrison, California Association of Realtors
Marc Brown, California Rural Legal Assistance Foundation
Rob Wiener, California Coalition for Rural Housing
Susan DeSantis, The Planning Center

APPENDIX

City of Arcata

The following changes would bring Arcata's housing element into compliance with Article 10.6 of the Government Code. Following each recommended change we cite the supporting section of the Government Code. Where particular program examples or data sources are listed, these are suggestions for your information only. We recognize that the City may choose other means of complying with the law.

A. Housing Needs, Resources, and Constraints

Include an inventory of land suitable for residential development, including vacant sites and sites having potential for redevelopment and an analysis of the relationship of zoning and public facilities and services to these sites (Section 65583(a)(3)).

The element includes a detailed response to our request for additional information regarding Arcata's proposal to use on-campus housing to accommodate a portion of the City's new construction need. It now estimates that on-campus housing could provide 175 of the 538 units needed for lower-income households. This estimate is based on several factors, including the commitment of Humboldt State University to build housing for an additional 502 students between 1991 and 1997.

However, we have recently been informed by the Director of On-Campus Housing that the University, due to State budget cuts, will only build housing for an additional 340 students. Using the formula on page VI-5, this translates into 84 units of student housing that may be applied towards the Arcata's share of the new construction need.

B. Programs

1. *Include programs which set forth a five-year schedule of actions Arcata will undertake to implement the policies and achieve the goals and objectives of the housing element (Section 65583(c)).*

a. The element's program section is divided into three parts:

- * Proposals to Increase Housing Opportunities in General (page XI-3);
- * Action Plan Addendum, Analysis of Inclusionary Zoning Alternatives (page XI-19); and

* Housing Element Policy Plan (page XII-1).

It appears that Arcata's original intentions were to implement the Housing Element Policy Plan and to use the remaining programs as a "menu" (see page XI-1) from which the City Council and Planning Commission could choose. Mr. Lashbrook informs us that the City Council and Planning Commission intends to implement all of the programs described in the element, except the inclusionary ordinance. This change in policy should be clearly stated in the element. The element should clearly reflect the programs the City plans to implement.

Since many programs are referenced in several sections, we also suggest that the City either combine the Policy Plan and the Action Plan or clearly indicate which actions and policies will be implemented and when. Doing this will assist City staff, developers, and other interested parties who will use the element as a planning document and aid the City in establishing priorities. We also recommend the City include target objectives for each program. These objectives will facilitate implementation and aid in monitoring the City's progress in implementing its programs. For your information, local governments are required to annually report on their progress in implementing the general plan including the housing element.

- b. The information on page XI-1 and XI-2 addresses many of our concerns about Arcata's housing programs. However, several program descriptions still lack important information such as: identification of the City agency or person responsible for implementation, a goal or objective, and/or implementation steps. And while page XI-2 indicates that measures involving long-term planning are expected to be implemented in two to five years, many programs should include more specific timelines. For example:

- * I-F: What are the minimum densities in the R-M, R-MH, and R-H zones? Which City agency is responsible for implementing this proposal? What is the City's objective?
- * I-H: When will this proposal be implemented? Which City agency is responsible for implementation? Describe any incentives

Arcata will offer to encourage mixed use development. What is the City's objective?

- * II-A: When will this proposal be implemented? Which City agency is responsible? Describe the special density bonus system Arcata is considering. Will Arcata's definition of handicapped and elderly be different than those of the State and federal governments?
- * III-C: Describe the projects Arcata expects to complete during the planning period of this housing element.
- * III-D: What percentage of units will be required to be available for lower-income households? What is the City's objective?
- * III-E: When will this proposal be implemented? Which City agency is responsible?
- * III-F: What criteria will Arcata use to determine how many lower-income units should be built? When will this proposal be implemented? Which City agency is responsible? What is the City's objective?
- * IV-A and IV-C: To meet the requirements of housing element law (Section 65583(c)(1)), the element should indicate when this proposal will be implemented and identify the responsible City agency.
- * V-D: When will this proposal be implemented? Which City agency is responsible? Describe any incentives Arcata will offer to encourage the development of large rental units? What is the City's objective.
- * Page XIII-3 indicates that Arcata is considering applying for HOME funds. The element should describe how the City plans to use these funds, when it will apply for them, and the agency responsible for their oversight.

2. *Include programs to address, and where appropriate and legally possible, remove governmental constraints to the maintenance, improvement, or development of housing (Section 65583(c)(3)). For example:*

The minimum open space requirements in Arcata's R-M, R-MH, and R-H zones are 35%, 50%, and 75% respectively. Acreage with steep slopes and wet lands may not be used to fulfill the open space requirements. While Mr. Lashbrook indicates that it is possible for developers to meet these requirements and achieve the typical densities described on page VIII-2, we are concerned that the excluding slopes and wet lands from open space calculations could result in hardship for developers of lower- and moderate-income housing.

Unless the City can demonstrate that low- and moderate-income housing can be built with the existing requirements, the element should include a program to modify Arcata's open space ordinance.

MEMORANDUM

May 18, 1993

TO: Planning Commission

FROM: Stephan Lashbrook, Community Development Director

SUBJECT: Response to HCD comments on Housing Element.

The State Department of Housing and Community Development (HCD) completed its review of Arcata's Housing Element and provided written comments (attached). HCD raised a number of questions and suggested some specific revisions. In most cases HCD requested more clarification (e.g., "Which City agency is responsible for implementation?", "What is the City's objective?", "When will the proposal be implemented?").

Although most of the answers to these questions can be found in the text of the Housing Element, the staff has taken the approach of providing detailed responses to each question or comment. In this way we should be able to avoid a repeat of our current situation, where it has taken HCD four months to respond. I recommend that we take the following approach:

1. Consider the HCD comments and our responses to be an addendum to the Housing Element, which will be reproduced and attached to the text:

Complete the Planning Commission's review of our responses at the meeting of May 25, forwarding a recommendation to the City Council;

Complete the City Council review at its meeting of June 2, with adoption of Resolution 923-44 to formalize the process.

I intend to hand-carry the packet back to HCD, meeting with the person who is in charge of conducting these reviews on June 4. It is imperative that we put this process behind us so that we can move ahead with the actual implementation of the Housing Element.

Attachments:

HCD letter to Alice Harris, dated May 7, 1993

Staff report: Responses to HCD comments

Resolution 923-44, authorizing the attachment of an addendum to the Housing Element.

MEMORANDUM

May 27, 1993

TO: Alice Harris, City Manager
FROM: Stephan Lashbrook, Community Development Director
SUBJECT: Response to HCD regarding Housing Element.

City staff recently received a letter from the California Department of Housing and Community Development (HCD) concerning our Housing Element. HCD posed a number of questions about the implementation of the Element.

In order to avoid a situation where the City might lose a chance for grant funding the staff feels that it is necessary to respond quickly to HCD's comments and questions. For this reason, the attached staff report was prepared. It was reviewed by the Planning Commission on May 25 and the Commission recommended that the City Council approve this response to HCD and adopt Resolution 923-44.

A copy has been provided to HCD staff with the hope that we could have some sort of response before the City Council reviews this item. Unfortunately, we do not yet have any reaction from HCD.

Recommendation

Approve Resolution 923-44, responding to HCD comments on the Housing Element of the Arcata General Plan.

Attachment: Staff report with attachments, dated May 18, 1993.

RESPONSES TO HCD COMMENTS ON HOUSING ELEMENT
May 1993

By letter dated May 7, 1993, the California Department of Housing and Community Development (HCD) raised a number of concerns and questions about the Housing Element of the Arcata General Plan which was adopted in January, 1993. Each of the comments made by HCD is paraphrased below, with the City's response following.

1. HCD QUESTION:

"Which City agency is responsible for implementation?"

CITY RESPONSE:

The City's Community Development Department is the responsible agency for all staff functions implementing the Housing Element. As noted in the Housing Element, both the Planning Commission and City Council have responsibility for the adoption of specific measures implementing the Housing Element.

2. HCD QUESTION:

"When will implementation occur?"

CITY RESPONSE:

Implementation began immediately upon the adoption of the Housing Element, on January 6, 1993. From that point on, each discretionary application involving housing has been evaluated in terms of compliance with the new Housing Element.

Amendments to that portion of the Arcata Municipal Code (commonly referred to as the Land Use and Development Guide), which implement the Housing Element, are scheduled to begin public hearings in July, 1993. Adoption of those amendments by the City Council will follow the public hearing process. At that point, those implementation measures will be in place.

There are implementation measures in the Housing Element which, because of constraints such as limited staffing, will not be immediately implemented. In such cases a note to this effect has been included within the text of the Housing Element.

3. HCD COMMENT:

"The Element should identify sites to facilitate the development of emergency shelters and include programs with specific implementation actions."

CITY RESPONSE:

Page III-4 of the Housing Element notes that Arcata has an operational six bed shelter (Arcata House, Inc.). It also notes that "hostels, group quarters, and the use of residential units to shelter six or fewer persons are all permitted at a variety of locations in the City. This means that facilities to house the homeless can be provided by public or private entities without undergoing a public hearing process."

A matrix has been prepared (attachment "A") showing the different City zoning districts and the types of accommodations for the homeless which will be permitted, conditionally permitted, or prohibited in the different zones after the proposed Code amendments are enacted. It should be noted that, even without the proposed changes, the City of Arcata allows such accommodations at a wide range of locations. As is noted in the Housing Element, in Arcata's situation it is not land use regulation which constrains the development of housing for the homeless, so much as a lack of funding. .

The following list shows the zones in which different types of shelters are permitted, and the area of each of those zones. This is so expansive that it does not seem necessary to include it in the text of the Element. Even without including more than 1,000 acres of land zoned for agricultural uses (where various types of accommodations for the homeless are permitted) the list includes the following:

Small shelters (six or fewer beds) are already permitted outright in all locations where a dwelling unit is permitted. This includes a total of more than 1,650 acres zoned F-H, R-R, R-L, R-M, R-MH, R-H, and CBD. In addition, there are more than 300 acres of land zoned G-C and I-C, where these small shelters are permitted with a conditional use permit, subject to the same standards as any dwelling unit. The point is, these small shelters are not treated any differently than other dwelling units. Literally hundreds of them could be provided in Arcata under current zoning.

Larger shelters can already be operated as hostels in the R-MH, R-H, and CBD zones (a total of approximately 175 acres) with no discretionary review required. They also could be permitted with a conditional use permit in the F-H, R-R, R-L, R-M, and G-C zones (a total of more than 1500 acres).

Single room occupancy (SRO) housing can be operated without any discretionary review in the CBD and T-C zones (a total of approximately 68 acres) and is subject to conditional use review in the G-C zone (about 55 acres).

All of these opportunities for housing the homeless already exist in Arcata. Additionally, the Housing Element (page XI-14) commits the City to make two changes to zoning standards to further enhance housing opportunities for the homeless. These are proposals IV-A and IV-C. The first will amend the definition of "group quarters" in the Municipal Code to assure that "transients" are no longer precluded from occupying such housing. This will affect all of the property which is zoned R-MH, R-H, and CBD (approximately 175 acres) where "group quarters" are permitted outright. It will also affect a total of more than 1500 acres zoned F-H, R-R, R-L, R-M and G-C,

where "group quarters" are listed as conditional uses.

IV-C will affect the 220 acres zoned P-F by making "emergency shelters" conditional uses in that zone.

Note that all of the amendments to the City's Land Use and Development Guide portion of the Municipal Code have already been prepared in draft form by City staff. They are undergoing final revisions before public hearings for adoption by both the Planning Commission and City Council. This process is described in more detail on page XI-2 of the Housing Element.

4. HCD COMMENT:

HCD has indicated that, based on a conversation with the "Director of On-Campus Housing," for Humboldt State University the City should reduce its projection of on-campus housing from 502 to 240 total units, with the number accommodating lower income households reduced from 175 to 84 units. This change is recommended "due to state budget cuts," even though the figures remain in the University's adopted Master Plan.

HCD's numbers would indicate that a total of 91 additional housing units need to be supplied as a result of this reduction in the number of on-campus housing units that are projected (presumably with a break-down that would mean that 36 are for very low income, 36 for other low income, and 19 for moderate income households).

CITY RESPONSE:

HCD staff apparently contacted a staff member of Humboldt State University's Dining and Housing Services and not the Director of that office. City contacts with the Executive Director of this University department, Mr. Harland Harris, do not support the information reported by HCD. Mr. Harris reported that, while current budget uncertainties reduce the probability that all of the planned on-campus housing will be constructed as scheduled, the HSU Master Plan will continue to show the additional construction within this planning period.

The University has announced that enrollment will be reduced by 1,250 students this year, with significant reductions in staff and faculty also occurring. Using the conservative estimate that 50% of HSU students live within the City of Arcata, 625 fewer students will live in the City as a result of this reduction in enrollment. Using the 1990 Census figure of 2.29 people per housing unit, a reduction of 625 people means that 273 fewer housing units will be needed. Note that these reductions do not include any of the housing units that are expected to become available because of staff and faculty reductions.

The high student population is considered to be one reason why more than 28% of Arcata's population was categorized by the 1990 Census as being below the poverty level. Without having detailed information about the income levels of students, it is obvious that the students of HSU tend to have incomes which are lower than those of the non-student residents of Arcata. HCD has accepted the City's calculations (contained on page IV-5 of the Housing Element) that 20% of on-campus residents are categorized as having

"moderate" incomes. While the remaining 80% are divided equally between the "very low" and "other low" income categories.

If we continue to apply those percentages, the 273 housing units which are expected to be available as a result of the reduction of 625 people from the City's population can be divided into 109 units each for very low and low income households and 55 units for moderate income households.

It is the position of the City of Arcata that there will be a net reduction in the need for affordable housing resulting from the various cut-backs being made at Humboldt State University. However, the City will retain the figures contained in the adopted Housing Element in order to maximize the construction of affordable housing and will continue to rely on the University's adopted Master Plan unless it is amended.

5. HCD COMMENT:

HCD requested more clarity regarding the City's intentions to implement the Housing Element. Confusion resulted because of the "menu" approach offered to City decision-makers by City staff.

CITY RESPONSE:

The entire "menu" was adopted by the City Council in approving the Housing Element. All of the implementation measures listed as "proposals" in Section XI (the Action Plan) of the Housing Element were adopted by the City Council and will be implemented.

6. HCD COMMENT:

HCD requested more information about a number of the implementation measures that the City intends to complete. HCD has asked who will be responsible for implementing these things, how soon they will be implemented, and what are the City's objectives?

CITY RESPONSE:

Most of this information can be found in the text of the Housing Element. The staff person responsible for implementation will be the City's Community Development Director. The timelines and objectives have been further clarified. It should be noted that the proposed amendments to the City's Land Use and Development Guide (basically, changes to the text of zoning and subdivision requirements) have been drafted and will soon begin public hearings before the City's Planning Commission.

7. HCD COMMENT:

HCD raised specific questions about the following implementation measures of the Housing Element: I-F; I-H; II-A; III-C; III-D; III-E; III-F; IV-A; and V-D.

CITY RESPONSE:

I-F, which requires modification of the standards for the R-M, R-MH, and R-H zones to specify minimum as well as maximum numbers of units per acre in these zones. The proposed text will set the minimum number of units at 8/acre in R-M zones, 12/acre in R-MH, and 16/acre in R-H. The proposed language allows for the Zoning Administrator to permit fewer units per acre based on a case-by-case review, upon finding that the proposed design provides adequate opportunities for additional housing development at a later date. This is intended to allow for development to occur in phases over time. The City's objective with this measure is to preclude those extremely rare instances where developers would otherwise choose to construct low density housing on sites which are zoned for multiple family development. There is no way to accurately estimate how often this would have occurred or the number of units affected. However, the City's quantified objective is the construction of at least three more housing units than would otherwise result during the planning period.

I-H, which will result in the creation of a mixed use zoning category which does not presently exist under City zoning. No incentives are expected to be needed to encourage mixed use development because residential sites tend to be of higher value in Arcata than commercial and industrial sites. In other words, existing market forces are expected to provide sufficient encouragement for mixed use development once appropriate zoning language has been adopted. The City has not specified a quantified objective for this measure for several reasons. Most noteworthy of these is the fact that the City does not know which, if any, of these sites will be able to meet standards for soil or groundwater contamination. The City intends to implement this measure in the 1995-96 fiscal year. If all or the affected properties are able to be redeveloped, the City anticipates the addition of approximately ten housing units within the planning period.

II-A, which will create a special density bonus system for housing developed specifically for the handicapped or elderly. This measure will allow developers to request special height, parking, density, and floor area standards for these developments, subject to review by the City's Planning Commission. While not requiring developers to take this approach, this Code amendment is intended to allow for much-needed flexibility in the review of these unique housing developments. The City will use the State definitions of "handicapped" and "elderly" for this purpose.

III-C, regarding the City's strategy for the use of redevelopment housing funds. As stated in the Housing Element, the main purpose of this measure is to assure that the redevelopment funds which are set aside for housing development will spread to a variety of different types of development. Projects which are anticipated in the strategy include: addition to Arcata's existing cooperative housing project; development of a senior housing project; and assistance to first-time homebuyers other developments which provide affordable housing. The strategy envisions the use of the set-aside funds for a variety of qualifying housing developments, based on cost-effective investments.

III-D, which will allow for creative housing developments on sites of less than one-half acre. The proposed Code language to implement this measure will specify that, in order to take advantage of the "alternative development option" the developer will have to provide at least one unit for a low income household in R-L, R-M, R-MH, and R-H zones and at least twenty percent of the units for very low income households in R-M, R-MH, and R-H zones. The City's quantified objective for this measure is the construction of an additional eight units for low or very low income households within the planning period.

III-E, which will establish special subdivision standards in R-L and F-H zones. As with all of the proposed amendments to Arcata's Land Use and Development Guide, this measure will be implemented immediately upon the enactment of the Code changes by the City Council. In order to take advantage of the "special residential subdivision" provisions, the developer will have to provide lots which meet the following affordability requirements: in minor subdivisions at least one lot must be reserved for occupancy by a low income household; in major subdivisions at least 20% of the lots must be reserved for occupancy by low income households; if the subdivision contains ten or more lots, at least 10% of the lots must be reserved for very low income households.

III-F, which will amend the "design features" for which Code exceptions are justified in planned developments. This proposed Code amendment does not envision any sort of quota system. Rather, it is intended to add to the list of design characteristics for which a developer may request a density bonus: "Creation of jobs or housing for people of moderate, low or very low incomes." This is a density bonus which is separate from, and additional to, the bonus guaranteed by State law. As with other provisions of the City's planned development standards, any developer can argue for this additional density bonus of up to 20% based entirely upon the design features of the development. The City's quantified objective for this measure is the construction of three additional units for lower income households during the planning period.

IV-A, which will amend the Code to define "group quarters" to include housing for the homeless and IV-C, which will add "emergency shelters" to the list of conditional uses in the P-F zone. Both of these changes are included within the Code amendments which will be going to public hearing before the City's Planning Commission in July. They will be implemented immediately upon adoption.

V-D, which will effectively divide all multiple family zones in the City into two categories: one near the University ("U" overlay zones); and one away from the University. HCD has inquired about incentives to stimulate the development of large rental units. In fact, this change will remove the current disincentives for this type of housing development. The current rules encourage the development of small rental units through the use of floor area ratio standards and parking requirements figured on a square footage rather than unit basis. The current rules effectively penalize those developers who would otherwise construct larger units. Those penalties will be removed under the new system. The City's quantified objective for this measure is the construction of 10 to 14 additional units for large families within the planning period..

8. HCD QUESTION:

How does the City intend to use HOME grant funds. when will the City apply, and who will be responsible for their oversight ?

CITY RESPONSE:

The Housing Element stated that the City intended to pursue funds from the HOME program. In fact, the City submitted an application for HOME funds in January of this year and that application was not approved. If it had been approved, that application would have provided funds for deferred second mortgages for low and very low income first-time homebuyers. The City now intends to improve that application and resubmit it in the next round of HOME grants. That is one of the reasons why the City is hopeful that HCD will promptly review and accept this submittal.

It is likely that the City will submit additional applications for funding through the HOME program, Community Development Block Grants, and other sources throughout the planning period in an effort to expand housing opportunities for lower income persons.

The City's Community Development Department is the City agency with oversight responsibility for these applications.

9. HCD COMMENT:

Unless the City can demonstrate that low and moderate income housing can be built with the existing open space requirements, the Element should include a program to modify Arcata's open space ordinance.

CITY RESPONSE:

HCD has expressed concerns about the fact that the City does not currently include all of the area of steep slopes and wetlands within the open space calculations for multiple family developments. However, relatively little of the area zoned for multiple family development has such site constraints. Where sites are known to have considerable wetlands or steep slopes they have not been included within the specific sites listed on pages VIII-3 and VIII-4 of the Housing Element, where typical build-out has been calculated.

The City will amend its Code to change this system where the developer provides resource enhancement or protection measures. This measure generated considerable public debate during the review of the Environmental Impact Report for the Housing Element. Members of the City's Creeks and Wetlands Advisory Committee originally argued that the current system should be maintained for environmental reasons.

The calculations of "typical build out" of developable properties shown in Section VIII of the Housing Element included consideration of the potential development limitations resulting from these requirements. In fact, however, it should not be difficult or expensive for developers to provide such features as wetland enhancement. In most cases such enhancement will effectively increase the value of developments which may occur.

For the reasons noted above, there are relatively few examples of multiple family developments which have been affected by the existing open space standards. In order to respond to HCD's request the City did evaluate a recent multiple family development which occurred on a site with steep slopes. The subject development consists of 26 one-bedroom units at the north end of L.K. Wood Boulevard. Approximately two-thirds of the site was dedicated as permanent open space, largely because of the constraints created by the slopes. The units rent for either \$350 or \$375 per month. Using HCD's latest figures (May, 1993) to determine income limits, and allowing for \$50 per month for utilities, all of the units qualify as being available for lower income households of either one or two persons. The following calculations apply to the example given above:

Rent:	\$375/month times 12 -	\$4,500/year
Utilities:	50/month times 12 -	<u>600/year</u>
	Total	\$5,100/year

Annual incomes:

Low, one-person household:	\$19.150
	<u>x 30%</u>
Affordable housing:	\$ 5,745
Low, two-person household:	\$21.900
	<u>x 30%</u>
Affordable housing:	\$ 6,570

ased on a recent survey of the rents charged for such units. Arcata's Community Development Department staff believes that nearly all rental units in Arcata's multiple family zones are available to households of moderate income and below. Note that for a four-person household with a moderate income, affordable housing in Arcata can cost as much as \$1,026/month.

Housing Opportunities for Homeless

Zoning District	Emergency Shelters (20-40 Occupants)	Transitional		Housing Group Qtrs	Arrangements		Support Centers / Day Facilities
		0 or less	1 or more		SRO Hotels	Hotels	
RP	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
-E	Conditional	Permitted	Conditional	Conditional	Prohibited	Conditional	Prohibited
-A	Conditional	Permitted	Conditional	Conditional	Prohibited	Conditional	Prohibited
-E	Conditional	Permitted	Conditional	Conditional	Prohibited	Conditional	Prohibited
-B	Conditional	Permitted	Conditional	Conditional	Prohibited	Conditional	Prohibited
R	Conditional	Permitted	Conditional	Conditional	Prohibited	Conditional	Prohibited
L	Conditional	Permitted	Conditional	Conditional	Prohibited	Conditional	Prohibited
-H	Conditional	Permitted	Conditional	Conditional	Prohibited	Conditional	Prohibited
-HB	Permitted	Permitted	Permitted	Permitted	Prohibited	Permitted	Prohibited
H	Permitted	Permitted	Permitted	Permitted	Prohibited	Permitted	Prohibited
C	Conditional	Permitted	Conditional	Conditional	Conditional	Conditional	Conditional
TD	Conditional	Permitted	Conditional	Permitted	Permitted	Permitted	Conditional
T	Prohibited	Prohibited	Prohibited	Prohibited	Permitted	Prohibited	Prohibited
C	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
I	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
F	Conditional	Conditional	Conditional	Prohibited	Prohibited	Prohibited	Conditional

NOISE ELEMENT
of the
ARCATA GENERAL PLAN

September 24, 1985

Prepared by:

Charles Simpson Associates, Inc.
P.O. Box 4864
Arcata, CA 95521

MEMORANDUM

TO: Whom It May Concern

FROM: Lia Sullivan, Associate Planner

DATE: March 6, 1995

SUBJECT: Errors found in the Arcata General Plan *Noise Element*

Based on the record (City Council Action, Planning Commission Action, and staff report to the City Council, staff determines that the adopted Noise Element document should include the following corrections:

EXECUTIVE SUMMARY

- POLICIES AND STANDARDS. Delete item 7:

[7. Encouragement of Eureka Southern to maintain facilities and reschedule operations so as to minimize noise impact.]
- POLICIES AND STANDARDS. Modify item 13 to read:

13. Limitation on public and private construction activity near residential uses to the hours of 7:00 a.m. to 7:00 p.m. or sunset, whichever is later, on weekdays and 8:00 a.m. to 6:00 p.m. or sunset, whichever is later, on Saturdays, Sundays and Holidays.

CHAPTER 4.0 POLICIES AND STANDARDS

- 4.3 NEW DEVELOPMENT on page 13; delete the ninth paragraph:

[The City shall encourage Eureka Southern to schedule Arcata area operations during non-critical periods between 7:00 a.m. and 10:00 p.m.; minimize horn blowing to the extent that public safety is not compromised and maintain their Arcata area track system at the highest possible level]
- 4.6 CONSTRUCTION ACTIVITY on page 14 should read:

Any construction in or near a residential use shall be confined to the hours of 7:00 a.m. to 7:00 p.m. or sunset, whichever is later, on weekdays and 8:00 a.m. to 6:00 p.m. or sunset, whichever is later, on Saturdays, Sundays and Holidays, except in emergencies. The City Departments of Public Works and Community Development shall notify all

recipients of building permits and public agencies or utilities with facilities within the City of these restrictions.

The City may require contractors or public entities operating within the City limits to maintain proper muffling of construction equipment.

Attachment: Annotated versions, showing where corrections were made.

cc: City Manager
Environmental Services Department
Public Works Department
Police Department

ANNOTATED CORRECTIONS

- POLICIES AND STANDARDS.

(underlines indicate added language; strikeout indicates deleted language):

13. Limitation on public and private construction activity near residential uses to the hours of 7:00 a.m. to 7:00 p.m. or sunset, whichever is later, on weekdays and ~~[9:00]~~ 8:00 a.m. to ~~[7:00]~~ 6:00 p.m. or sunset, whichever is later, on Saturdays, Sundays and Holidays.

CHAPTER 4.0 POLICIES AND STANDARDS

- 4.6 CONSTRUCTION ACTIVITY on page 14:

(underlines indicate added language; strikeout indicates deleted language):

Any construction in or near a residential use shall be confined to the hours of 7:00 a.m. to 7:00 p.m. or sunset, whichever is later, on weekdays and ~~[9:00]~~ 8:00 a.m. to ~~[7:00]~~ 6:00 p.m. or sunset, whichever is later, on Saturdays, Sundays and Holidays, except in emergencies. The City Departments of Public Works and Community Development shall notify all recipients of building permits and public agencies or utilities with facilities within the City of these restrictions.

The City may require contractors or public entities operating within the City limits to maintain proper muffling of construction equipment.

DRAFT
NOISE ELEMENT
of the
ARCATA GENERAL PLAN

September 24, 1985

Prepared by:

Charles Simpson Associates, Inc.
P.O. Box 4864
Arcata, CA 95521

EXECUTIVE SUMMARY
NOISE ELEMENT
of the
ARCATA GENERAL PLAN

Each California city and county is required by Government Code Section 65302(f) to prepare and adopt a Noise Element as a part of its General Plan. The 1980 Arcata General Plan included a Noise Element prepared in 1975 which needed updating.

GOALS AND OBJECTIVES

The revised Noise Element for the 1985 Arcata General Plan provides a clearer understanding of the Arcata noise environment and a more effective planning tool for City staff and decisionmakers. The functions and content of the Noise Element are generally described by the goals and objectives outlined in Chapter 2:

1. Comply with Government Code Section 65302(f).
2. Identify, quantify and map major noise sources, extent of existing and future impact.
3. Assess community noise sensitivity thresholds.
4. Establish acceptable and enforceable noise standards.
5. Develop policies governing new development which limit noise/land use conflicts.
6. Provide for abatement of existing noise problems.
7. Coordinate noise planning and enforcement efforts.

FINDINGS

Chapter 3 summarizes and evaluates the data presented in Chapters 5, 6 and 7, providing general policy direction reflected in the policies and standards of Chapter 4. The findings of Chapter 3 include:

1. Substantial portions of the Arcata planning area are subject to noise levels in excess of 55 dBA L_{dn} , the approximate lower threshold of significant annoyance and complaint defined by the EPA. Highways 101 and 299 L_{dn} 's exceed 55 dBA within wide corridors. Samoa Boulevard, K Street, Alliance Road, Spear Avenue, Giuntoli Lane and Janes Road generate a mappable but far less significant noise influence.
2. Existing residential areas along the 101 and 299 corridors are subject to significant freeway noise particularly between 4th and 12th Streets and near the 101/299 interchange.
3. The railroad L_{dn} 's exceed 55 dBA within a wide corridor. Duration of daily noise events, however, is limited to two evening trips per day.
4. Railroad noise is difficult and may be costly to mitigate. Regulation should recognize the limited nature of the intrusion.
5. Constant stationary sources generate significant noise but generally not in sensitive areas. Intermittent sources generate major intrusive noise in selected sensitive areas.

6. Complaint statistics indicate that transportation and stationary noise sources are not a major public concern. Highest sensitivity is to intrusive domestic noise (parties, music, dogs) during evening and night hours.
7. Existing land use regulations do not reflect night-time sensitivity and do not provide a clear standard for evaluation of proposed projects. Extensive information on standards is available from Federal and State sources and other communities.
8. Existing regulations are ineffective in controlling intrusive noise. No clear standards exist for noise intrusion into residential areas other than for industrial emissions.

POLICIES AND STANDARDS

Chapter 4 of the Element defines the City's policies and standards related to noise and land use planning. Policies and standards address:

1. Arcata's commitment to maintain or achieve acceptable noise levels for its residents and business people.
2. Coordination with other government agencies and organizations to avoid or abate noise problems.
3. Definition of acceptable exterior L_{dn} noise standards for various land use types.
4. Definition of enforcement standards for allowable exterior noise intrusion into noise-sensitive land uses.
5. Definition of interior noise standards for multi-family residential uses.
6. Regulation of new development to limit construction in noise-impacted areas without adequate mitigation.
7. Encouragement of Eureka Southern to maintain facilities and re-schedule operations so as to minimize noise impacts. *HAS*
8. Enforcement of State Noise Insulation Standards.
9. Guidelines for Design Assistance Committee review of new construction.
10. Requirements that existing commercial and industrial sources bring operations into conformance with defined standards by January 1, 1995.
11. Requirements that potential noise sources comply with standards and be subject to the Conditional Use Permit process.
12. Requirements that home occupations, private and public events be subject to defined intrusive noise standards.
13. Limitation on public and private construction activity near residential uses to the hours of 7:00 a.m. to 7:00 p.m. weekdays and ~~9:00~~ 8:00 a.m. to 7:00 p.m. Saturdays, Sundays and Holidays. *or sunset, whichever is later, on*
14. Urging CalTrans to evaluate need and construct noise attenuation barriers along certain sections of Highways 101 and 299.
15. Application of a higher density residential districts in certain R-L and M districts near major noise sources.

16. Adoption and enforcement of a Noise Ordinance incorporating the policies and standards of the Noise Element.

BACKGROUND INFORMATION

Chapter 5 of the Noise Element provides background information on the characteristics of noise and systems for measuring noise exposure and reviews potential methods for attenuating noise.

Chapter 6 identifies and quantifies major noise sources within the planning area including streets and highways, the Eureka Southern Railroad and stationary sources. The contributions of these sources to the Arcata noise environment are summarized on the Noise Contour Map (pocket) in terms of Day-Night Average Noise Levels (L_{dn}).

Chapter 7 reviews literature defining the general community acceptability of various L_{dn} levels and the particular sensitivities of Arcata area residents as reflected by noise complaints received. Existing noise regulations and options for local noise enforcement are also addressed.

NOISE ELEMENT
of the
ARCATA GENERAL PLAN

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Noise Contour Map

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CHAPTER 1.0 INTRODUCTION

With increasing urbanization and intensification of development nationwide and within California communities, noise has increasingly become an important measure of the quality of home, working and recreational environments. As its importance increases, so has the regulation of noise by Federal, State and local agencies.

1.1 LEGISLATIVE MANDATE

Each California city and county is required to prepare and adopt a Noise Element as a part of its General Plan. Noise Element preparation is mandated by Government Code Section 65302 (f) which specifies the Element's contents:

65302. Elements of plan. The general plan shall consist of a statement of development policies and shall include a diagram or diagrams and text setting forth objectives, principles, standards, and plan proposals. The plan shall include the following elements:

(f) A noise element which shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

- (1) Highways and freeways.
- (2) Primary arterials and major local streets.
- (3) Passenger and freight on-line railroad operations and ground rapid transit systems.
- (4) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.
- (5) Local industrial plants, including, but not limited to, railroad classification yards.
- (6) Other ground stationary noise sources identified by local agencies as contributing to the community noise environment.

Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (L_{dn}). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified in paragraphs (1) to (6), inclusive.

The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise.

The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards.

1.2 OVERALL OBJECTIVES FOR NOISE ELEMENT REVISION

Arcata's objectives for land use planning are outlined in the 1980 General Plan which establishes the City's overall goal to

"...preserve and enhance existing development, and to provide for orderly and appropriate new development to meet the needs of the area over the next 20 years."

The existing Noise Element of the General Plan (1975) recognizes the need for incorporation of noise influences into the land use planning process in order to provide for "orderly and appropriate new development" and includes broad policies and standards for noise control and coordination. The 1975 Element does not, however, reflect refinements in noise and land use planning methods and is based on outdated noise information and systems of noise measurement.

The General Plan is undergoing its second five-year revision during 1985; the 1985 program includes revision of the Noise Element in order to reflect improvements in community noise planning abilities since 1975, population and traffic growth in the community and the need for more comprehensive noise information. The revised Noise Element will influence the revision of other General Plan elements, and, most notably, will provide a basis for preparation of a noise ordinance providing the City with an authority to deal with noise problems not previously available.

Specifically, the purposes of the Noise Element revision are to:

1. Provide a clearer understanding of the Arcata noise environment in order to allow Arcata planning efforts to fully embody noise-related concerns.
2. Satisfy the requirements of the Government Code.
3. Provide an effective decisionmaking tool for City staff and decisionmakers for use in avoiding exacerbation of or improving existing noise problems, and avoiding the development of future noise impact problems.

CHAPTER 2.0 NOISE ELEMENT OBJECTIVES

2.1 STATUTORY COMPLIANCE.

Provide compliance with Government Code Section 65302(f), recognizing guidelines for its implementation prepared by the State Office of Noise Control.

2.2 DESCRIBE ARCATA NOISE ENVIRONMENT.

Identify, quantify and map major noise sources within the planning area and the extent of their existing (1985) and future (1995) impact on the community.

2.3 ASSESS COMMUNITY NOISE SENSITIVITY.

Establish thresholds of noise-related annoyance and lifestyle interference through literature review.

Review noise complaints and interview agencies potentially receiving complaints.

Assess community sensitivity to particular noise sources.

2.4 ESTABLISH ENFORCEABLE NOISE STANDARDS.

Establish acceptable L_{dn} and statistical noise limits for various land uses which will apply to the emission of noise from sources near sensitive receptors and the location of sensitive receptors in noise-impacted areas.

2.5 DEVELOP POLICIES FOR NEW DEVELOPMENT LIMITING NOISE/LAND USE CONFLICTS.

Establish policies which will avoid siting of noise-sensitive new development in unsuitable locations unless adequate noise mitigation measures are incorporated in development plans. Establish policies which avoid the siting of new noise-generating uses in or near noise-sensitive areas without adequate emission controls.

Establish policies for transportation planning which minimize future effects of transportation corridors on sensitive land uses.

2.6 PROVIDE FOR ABATEMENT OF EXISTING NOISE PROBLEMS.

Establish requirements for compliance with standards and schedule of enforcement for existing stationary sources which affect sensitive uses.

Establish standards and enforcement procedures for intrusive noise problems generated randomly within the community.

Identify opportunities to reduce unacceptable noise levels generated by transportation sources.

Provide for the effective enforcement of City, State and Federal noise standards by responsible City departments.

Maintain or achieve acceptable noise levels near highly-sensitive land uses such as schools, hospitals, convalescent facilities.

Identify opportunities and establish policies for influencing agencies or organizations which control or influence significant noise sources to reduce existing noise or moderate anticipated future noise increases. .pa

2.7 COORDINATE NOISE PLANNING AND ENFORCEMENT EFFORTS.

Provide for coordination between responsible City departments and between the City and other responsible agencies involved in noise regulation or abatement.

Insure continuing reevaluation of the noise environment to insure the maintenance of an acceptable noise environment.

CHAPTER 3.0 ANALYSIS AND FINDINGS

Analysis of data collected and presented in Chapters 5.0, 6.0 and 7.0 yields certain findings which should provide the City with policy direction and which are reflected in the policies and standards of Chapter 4.0. These findings are summarized below.

Substantial portions of the Arcata planning area are subject to noise levels in excess of 55 dBA L_{dn} . The 55 dBA L_{dn} level is the approximate lower threshold of significant annoyance and complaint defined by the EPA in their Noise Effects Handbook (EPA, 1981). See Appendix A.

Highways 101 and 299 generate noise in excess of 55 dBA within wide corridors along their alignments. Street and highway noise is relatively constant during daylight hours, dropping significantly at night. Samoa Boulevard and other local streets generate substantially less noise which is significant in the vicinity of certain roadways. Local streets generating significant noise are those with higher ADT's. Street sections of note would include K Street between 7th and 11th, Alliance Road, Spear Avenue, Giuntoli Lane and Janes Road. Regulation of the siting of new sensitive uses within areas impacted by street and highway noise should be addressed in the Policy Section.

Certain existing residential areas are subject to significant freeway noise along the Highway 101 and 299 corridors, particularly between 4th and 12th Streets and near the 101/299 interchange. Policies should address noise abatement potentials in these areas.

The Eureka Southern Railroad produces L_{dn} levels in excess of 55 dBA within a wide corridor; however, the duration of daily noise events is very limited, confined to two pass-bys per day within a narrow period. Calculated noise levels would indicate that railroad noise would make single-family residential construction unacceptable within 370 feet of the railway without mitigation; similarly, multi-family residential would be unacceptable within 200 feet of the railway.

Principal railroad sources (diesel locomotive, horn) are penetrating and difficult to mitigate; even 30 dBA of attenuation would yield an interior locomotive horn noise level of 62 dBA at 100 feet, and very high barriers would be required to achieve such reductions. Thus, effective mitigation other than setbacks is probably infeasible. Requiring 2-400 foot setbacks would seem an undue restriction on development, particularly when railroads are, and are expected to be, confined to one or two operations per day. Regulation of land use within the impacted area should recognize the limited nature of the noise intrusion.

Stationary industrial and commercial noise sources generate significant constant noise levels but generally not in sensitive areas. Industry generates intermittent major intrusive noise in selected sensitive areas. Policies should address reduction of constant noise sources where standards are exceeded, avoidance of new source location in sensitive areas without adequate controls and the reduction of intrusive noise whenever possible.

Complaint statistics indicate that major transportation and stationary noise sources are not a major public concern, perhaps due to adaptability or a higher acceptability of relatively consistent noise sources. Statistics indicate residents' highest sensitivity is to intrusive noise generated during evening and night hours by occasional noisy activities such as parties, music and barking dogs within sensitive residential areas.

Existing regulations are less than effective in insuring proper siting of new development. Existing standards may be too low, do not reflect nighttime sensitivity and do not provide a clear standard for evaluation of

proposed projects. New standards should be set based on extensive information available from Federal and State sources and their application in their communities.

Existing regulations are ineffective in controlling intrusive noise. CPC 415 (Disturbing the Peace) is the predominant legal means of controlling intrusive noise events and requires relatively extreme conditions to be present before the Police Department effectively utilize its provisions in responding to a complaint.

There are no clear standards for noise intrusion into residential areas other than for industrial emissions. Existing regulations regarding industrial emissions are somewhat ambiguous, do not define standards for all sensitive uses and do not provide a clear basis for enforcement.

Construction noise standards are not established anywhere in City ordinances, but are maintained on an informal basis by the Department of Community Development.

Negotiated agreements with industrial and commercial operators and formal requests to construction contractors have been partially successful in resolving conflicts between these uses and residential areas. New noise enforcement provisions should incorporate mechanisms for negotiated resolution where feasible in order to allow the City a certain flexibility in resolving conflicts.

Existing regulations controlling organized events adequately establish enforcement authority and appear to adequately resolve conflicts, but do not establish noise emission standards.

CHAPTER 4.0 POLICIES AND STANDARDS

4.1 GENERAL

The City shall, in exercising its decisionmaking authority and police power and in its daily operations, seek to maintain or achieve acceptable noise levels for its residents and business people in all areas of the City.

The City shall define acceptable noise levels for various land use types and shall establish means to achieve compliance with these standards whenever feasible.

The policies and standards of the Noise Element shall be incorporated into the Arcata General Plan 1985 and subsequent revisions of the General Plan, as appropriate.

The City shall coordinate with other government agencies and organizations, as appropriate, to avoid the development of new noise problems and to abate noise-related nuisances. In particular, the City shall encourage the County of Humboldt to respond to noise-related complaints and to include mitigation provisions in projects subject to County permitting which will avoid improper siting of sensitive uses in noise-impacted areas or establishment of noise sources which exceed standards defined in this document.

The City shall periodically review and update the Noise Element in order to ensure that information, policies and standards accurately reflect changing conditions in the community.

4.2 ACCEPTABLE NOISE STANDARDS

Acceptability of environmental noise levels for various land use types shall be as set forth in Figure 1, derived from the EPA's Land Use Compatibility Matrix for Community Noise Environments and refined for the Arcata area.

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE L_{dn} OR CNEL, dB					
	55	60	65	70	75	80
RESIDENTIAL – LOW DENSITY SINGLE FAMILY, DUPLEX, MOBILE HOMES						
RESIDENTIAL – MULTI. FAMILY						
TRANSIENT LODGING – MOTELS, HOTELS						
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES						
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES						
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS						
PLAYGROUNDS, NEIGHBORHOOD PARKS						
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES						
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL						
INDUSTRIAL, MANUFACTURING UTILITIES, AGRICULTURE						

INTERPRETATION



NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



CONDITIONALLY ACCEPTABLE

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.



NORMALLY UNACCEPTABLE

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

FIGURE 1

ARCATA STANDARDS FOR NOISE/LAND USE COMPATIBILITY (L_{dn})

Enforcement standards for allowable noise intrusion into noise-sensitive land uses shall be as established in Table 1 drawn from the ONC's Model Community Noise Ordinance.

TABLE 1

ENFORCEMENT LIMITS FOR EXTERIOR NOISE (L_{50})
 (Levels Not To Be Exceeded More Than 30 Minutes in Any Hour)

Receiving Land Use Category	Time Period	Noise Level (dBA)
1 & 2 Family Residential	10 pm - 7 am	45
	7 am - 10 pm	55
Multiple Dwelling Residential/Public Space	10 pm - 7 am	50
	7 am - 10 pm	55
Limited Commercial/ Some Multiple Dwellings	10 pm - 7 am	55
	7 am - 10 pm	60
Commercial	10 pm - 7 am	60
	7 am - 10 pm	65
Light Industrial	Any Time	70
Heavy Industrial	Any Time	75

Where significant noise of shorter duration is generated (less than 30 minutes per hour) the following adjustments to exterior noise limits specified in Table 1 shall be made:

1. The noise standard plus 5 dB for a cumulative period of more than fifteen minutes in any hour (L_{25}); or
2. The noise standard plus 10 dB for a cumulative period of more than five minutes in any hour ($L_{8.3}$); or
3. The noise standard plus 15 dB for a cumulative period of more than one minute in any hour ($L_{1.7}$); or
4. The noise standard plus 20 dB or the maximum measured ambient level, whichever is greater, at any instant (L_0).

The interior noise standard for multi-family residential uses shall be 45 dBA L_{dn} . The following L_{50} standards shall apply when questions of noise intrusion arise:

TABLE 2

INTERIOR NOISE STANDARDS (L_{50})

Time Period	L_{50} Standard
10 pm - 7 am	35 dBA
7 am - 10 pm	45 dBA

4.3 NEW DEVELOPMENT

New construction shall be permitted subject to other requirements of the General Plan and the Land Use and Development Guide (LU&DG) within areas affected by highway and stationary sources when noise levels are within the "Normally Acceptable" range indicated on Figure 1.

New construction in areas with existing noise levels classified as "Conditionally Acceptable" and "Normally Unacceptable" may be permitted upon demonstration by the applicant and reasonable judgement by the City that:

1. Noise Element maps do not accurately represent noise conditions on the site and the applicant submits information demonstrating that existing noise levels fall within the "Normally Acceptable" range; or
2. Applicant submits project design information and acoustical analysis indicating that the project design would reduce environmental noise such that outdoor noise levels in usable open space areas would not exceed the "Normally Acceptable" limits and that interior noise levels would conform to standards.

New residential subdivision and development in the vicinity of the Eureka Southern Railroad shall be designed to allow for minimum setbacks of 100 feet from the track centerline except where existing lot configuration would prohibit reasonable development of the site.

Approval of subdivision projects of greater than four lots should be subject to findings that railroad-related noise is or will be mitigated to the degree feasible. Typical conditions of approval may include construction of a masonry berm or wall along the railroad right-of-way and property lines in order to provide a barrier to wheel and track noise. Existing conditions such as the railroad being above or below the site grade, or where existing buildings muffle railroad noise, would be grounds for findings that barriers would not provide significant interruption of track noise or that existing conditions adequately mitigate railroad noise, respectively.

Multi-family developments near the railroad shall include feasible site planning and noise insulation features which would minimize the effects of railroad noise on future occupants.

Commercial and industrial development within the vicinity of the railroad shall be unrestricted except as otherwise required by the LU&DG.

The City shall encourage Eureka Southern to schedule Arcata area operations during non-critical periods between 7:00 a.m. and 10:00 p.m., minimize horn blowing to the extent that public safety is not compromised and maintain their Arcata area track system at the highest possible level.

New residential development on sites subject to industrial noise exceeding standards shall be allowed when there is a reasonable expectation that industrial noise will conform to standards.

The City shall enforce the State Noise Insulation Standards set forth in Title 25 of the California Administrative Code and the provisions of Uniform Building Code Chapter 35 with respect to multi-family housing projects.

In reviewing development applications within noise-impacted areas, the Design Assistance Committee should consider architectural design features and site treatments which would improve living and working environments with respect to noise, including:

1. Entry and window configuration and location which would minimize interior noise levels.
2. Patio and balcony locations.
3. Building height, parapet walls, lateral projections as barriers to noise propagation.
4. Floor plan considerations.
5. Dense landscaping between source and receiver.

4.4 STATIONARY NOISE SOURCE CONTROL

Existing commercial and industrial sources which produce noise levels in residential districts exceeding standards outlined in Figure 1 or Table 1 shall be required to bring operations into conformance with these standards by January 1, 1995.

New commercial and industrial uses potentially producing noise in excess of standards outlined in Table 1 shall be subject to the Conditional Use Permit process and shall be required to demonstrate conformance with noise standards prior to issuance of required permits.

Noise standards established in Table 1 shall apply to the installation and use of noise-generating equipment on public, residential and recreational properties. The Building Inspector may require acoustical review and modification of such installations where it is determined that significant risk of noise standard exceedance exists.

4.5 INTRUSIVE NOISE

The City shall seek to minimize intrusive noise whenever feasible.

Home occupations, private and public events and the individual playing of music shall be subject to the standards of Table 1.

4.6 CONSTRUCTION ACTIVITY

Any construction activity in or near a residential use shall be confined to the hours of 7:00 a.m. to 7:00 p.m. weekdays and ~~8:00 a.m. to 2:00 p.m.~~ ^{or sunset, whichever is later, on} Saturdays, Sundays and Holidays, except in the case of emergencies. The City Departments of Public Works and Community Development shall notify all recipients of building permits and public agencies or utilities with facilities within the City of Arcata of these restrictions.

The City may require contractors or public entities operating within the City limits to maintain proper muffling of construction equipment.

4.7 TRANSPORTATION

The City shall maintain the elements of the existing arterial system as defined in the Circulation Element as the principal circulation and truck routes within the City.

At such time as the City seeks to construct the Foster Avenue or East Side Extensions or other potentially high-volume roadway, final route selection should be preceded by noise impact analysis and a review of General Plan and zoning designations for the area.

In order to protect existing and potential future residential development from freeway noise, the City should urge CalTrans to evaluate the need for and construct, if necessary, noise attenuation barriers along State Highways in the following areas:

- Highway 101 - North of 299 intersection, both sides, to south end of thoroughfare commercial zone.
 - Southbound off-ramp to Samoa Boulevard
- Highway 299 - Along north side from Highway 101 to south end of Giuntoli Lane on-ramp

4.8 LAND USE ELEMENT

The City should consider the application of a higher density residential district to the R-L district in the half block east of K Street from 9th to 12th Streets.

Consider replacing existing industrial designations with high density residential development west of Highway 101 between the north end of Eye Street and the West End undercrossing.

4.9 CITY OPERATIONS

New equipment and vehicles purchased by the City shall conform to applicable noise standards and noise control features on existing vehicles and equipment shall be maintained in proper working order.

Operations of all departments involved in construction and repair activity shall be conducted in accordance with the policies of Section 4.6 for construction activities.

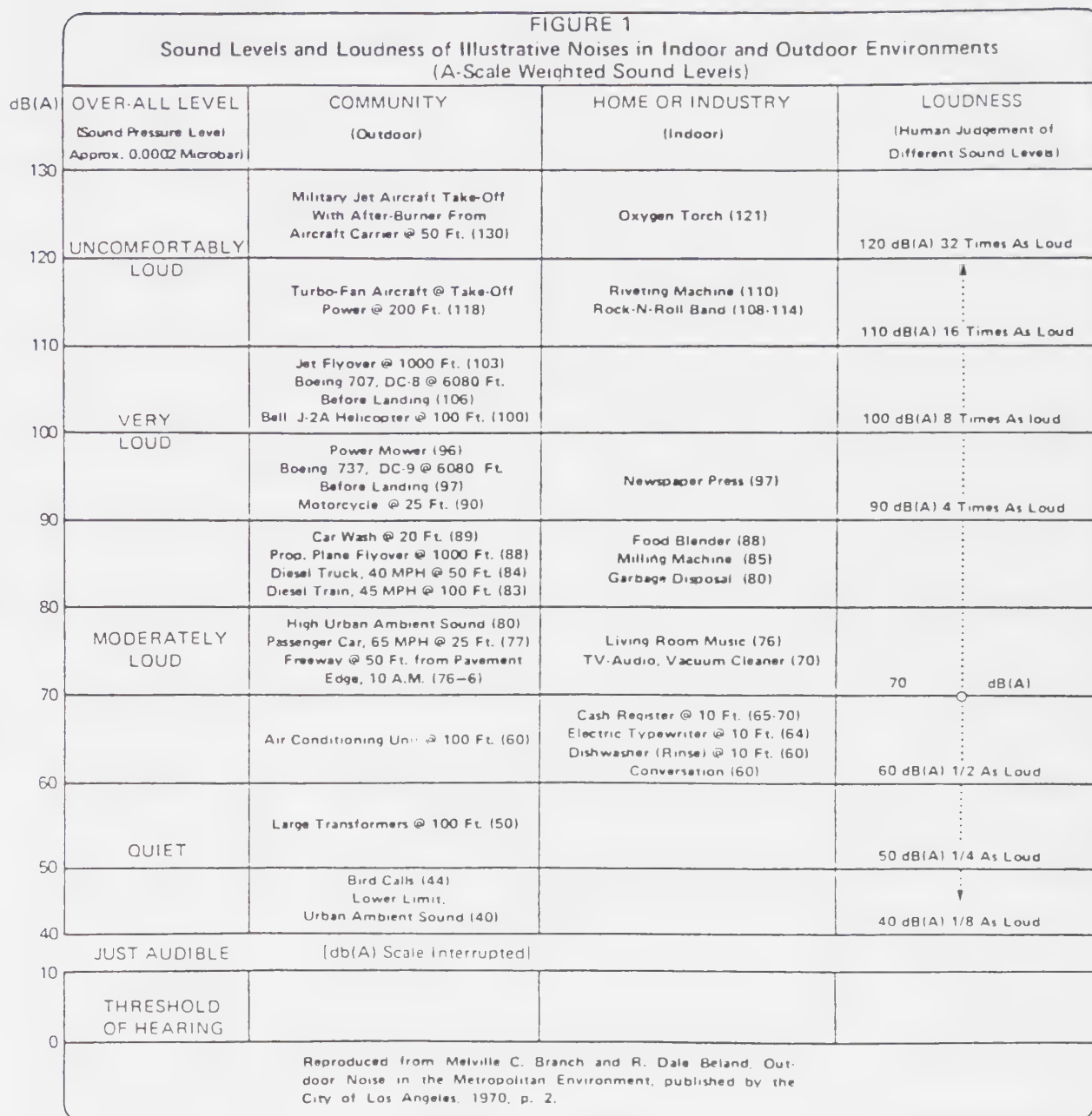
The Police Department shall actively enforce speed exhibition, muffler and modified exhaust system provisions of the California Vehicle Code.

The City Departments of Public Works and Community Development shall notify all recipients of building permits and public agencies or utilities with facilities within the City of Arcata of limitations on acceptable hours of construction outlined in Section 4.6.

4.10 ENFORCEMENT

The City shall adopt and enforce a Noise Ordinance incorporating the policies and standards of the Noise Element and establishing enforcement authority and procedures for enforcement. The Ordinance shall be based upon the State Office of Noise Control's "Model Community Noise Ordinance".

The City shall, in adopting the Noise Ordinance, establish a screening process for resolution of noise/land use conflicts where the reduction of offending noise can be achieved through negotiation. Options for conflict resolution may include restriction of hours of operations, certain outputs or other means.



Source: City of Glendale, 1978

Figure 2

CHAPTER 5.0 UNDERSTANDING NOISE CHARACTERISTICS AND MEASUREMENT

Numerous Noise Elements have included descriptions of the nature of environmental noise and the corresponding human response, methods of noise measurement for planning purposes and standards indicating the acceptability of various noise levels for the human environment. The following Sections 5.1 and 5.2 are drawn from the Noise Element of the Glendale General Plan (1978).

5.1 NOISE CHARACTERISTICS

Everyday, people are subjected to a multitude of sounds in the urban environment. Many of these sounds are by-products of desirable and necessary day-to-day activities. Unfortunately, some of these sounds, such as the thunder of jet aircraft and the roar of cars and trucks are not only undesirable but are also detrimental to health. These sounds are generally referred to as noise.

Sound is created when an object vibrates and radiates part of its energy as acoustic pressure or waves through a medium such as air, water or a solid. The ear, the hearing mechanism of humans and most animals, receives these sound pressure waves and converts them to neurological impulses which are transmitted to the brain for interpretation. The combination of the ear and brain results in a perception of sound.

There are two parameters that are used technically to describe simple sounds: amplitude and frequency. Amplitude is measured in units of decibels, abbreviated dB. The amplitude of a sound is a measure of the pressure or force that a sound can exert. Frequency is measured in Hertz (hz), meaning cycles per second, and refers to the number of times that the acoustic pressure (amplitude) peaks in each sound. A sound that has more cycles per sound is higher-pitched. High-pitched sounds are produced by a rapidly vibrating sound source and, conversely, low-pitched sounds are from a more slowly vibrating source.

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale was devised to relate noise to human sensitivity. The A-weighted dB (dBA) scale performs this compensation by discriminating against frequencies both above and below 1,000 hz in a manner approximating the sensitivity of the human ear. The basis for comparison is the faintest sound audible to the average, young, male, human ear at the frequency of maximum sensitivity.

Doubling the sound pressure of a noise source causes the decibel rating to be increased by only 6 dB due to the logarithmic nature of the noise scale. However, due to nonlinearities in the mechanism of the human ear, a sound must be nearly 10 dBA higher than another to be judged twice as loud. It follows that a sound of 20 dBA is four times as loud, and 30 dBA is eight times as loud.

Everyday sound normally ranges from 30 dB (very quiet) to 100 dB (very loud). The average level of conversation ranges from 30 to 80 dB. Sound becomes discomforting at 120 dB and physically painful above 140 dB. Examples of various sound levels and human response are shown in Figure 2.

5.2 NOISE RATING SCALES

Several rating scales have been developed for the measurement of community noise. The predominant rating scales now in use in California are:

1. L_{eq} - **Energy Mean Noise Level.** The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period.
2. L_{dn} - **Day-Night Average Sound Level.** Similar to L_{eq} , but applies a weighting factor which places greater significance on noise events occurring at night (10:00 p.m. to 7:00 a.m.) than during the day (7:00 a.m. to 10:00 p.m.).
3. **CNEL - Community Noise Equivalent Level.** Similar to L_{dn} but with weighting factors placed on two time periods (evening, 7:00 p.m. to 10:00 p.m., and night, 10:00 p.m. to 7:00 a.m.).

In recent years, qualitative terms of noise have been replaced by statistical descriptions of noise. Noise values are given statistically in percentiles. For example, the 90th percentile value existing at a measurement location is the noise value exceeded 90 percent of the time. It is abbreviated by the term L_{90} . Percentile values which have come into common use to describe the characteristics at a location include L_{90} , L_{50} and L_{10} . The L_{90} value is called the "residual" noise level. The L_{50} value represents the peak or near peak noise level.

One of the greatest problems in noise analysis is that of relating noise exposure to health and welfare, and determining adequate maximum noise levels for the protection of well-being. Although there has been some dispute in the scientific community regarding the detrimental effects of noise, a number of general conclusions have been reached:

- * Noises of sufficient intensity have caused irreversible hearing damage.
- * Noises have produced physiological changes in humans and animals that in many instances have not resulted in adaption.
- * The effects of noise are cumulative and, therefore, the levels and duration of noise exposure must be taken into account in any overall evaluation. The recognition of this fact has been translated into legislation specifying limits of total permissible noise exposure in industrial settings.
- * Noises can interfere with speech and other communications.
- * Noise can be a major source of annoyance by disturbing sleep, rest and relaxation.
- * When community noise levels have reached sufficient intensity, social action has occurred to reduce their effects. This has often taken the form of creating new organizations (or using existing ones) to press for means of laws, ordinances and standards.

The EPA has identified noise levels considered requisite to protect health and welfare with an adequate margin of safety. These levels are summarized in Table 3. The L_{eq} (24) values represent energy averages over a 24-hour period. For the protection against hearing loss, 96 percent of the population would be protected if noise levels are less than or equal to an L_{eq} (24) of 70 dB. EPA analysis of anticipated community effects at various L_{dn} levels are shown in Appendix A.

TABLE 3

SUMMARY OF NOISE LEVELS IDENTIFIED AS REQUISITE TO
PROTECT PUBLIC HEALTH AND WELFARE
WITH AN ADEQUATE MARGIN OF SAFETY

Effect	Level	Area
Hearing Loss	L_{eq} (24) 70 dB	All areas
Outdoor Activity interference and annoyance	L_{dn} 55 dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	L_{eq} (24) 55 dB	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	L_{eq} 45 dB	Indoor residential areas.
	L_{eq} (24) 45 dB	Other indoor areas with human activities such as schools, etc.

Interference with speech communication is one of the most common effects of noise. Figure 3 shows the effect of noise on speech communication. Some people believe that they are not affected by high levels of background noise; however, most are not consciously aware of their adoption of nonverbal communications through gestures, posture and facial expression as compensating devices for normal communication.

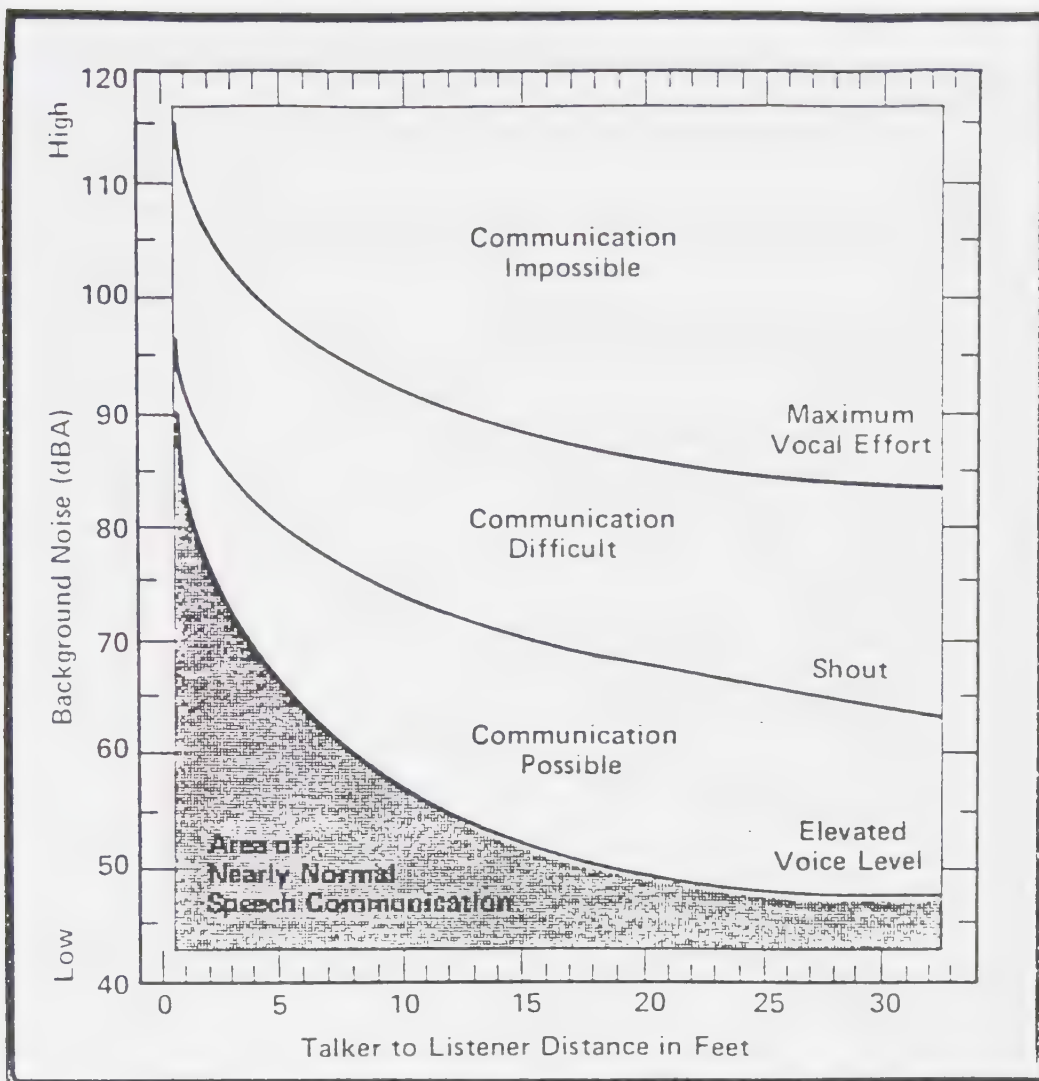


FIGURE 3

QUALITY OF SPEECH COMMUNICATION IN RELATION TO DISTANCE BETWEEN TALKER AND LISTENER

3.3 NOISE ATTENUATION METHODS

Attenuation of noise involves treatment of the source, transmission path or receiver to deflect or absorb transmitted noise.

Principal noise sources in Arcata include transportation corridors and stationary sources. Regulation of transportation noise at the source is preempted by State and Federal regulation. Stationary sources may, however, potentially be regulated at the source by the City. Reduction of stationary source emissions would require changes in existing equipment to reduce noise emissions, muffling of equipment, structural enclosure or insulation. Impact on the community may also be reduced by regulating hours of operation to reduce emissions during sensitive periods.

Treatments of the transmission path are the primary method of noise attenuation, particularly for ground transportation sources. Transmission path treatments may include increasing distance between source and receiver, introduction of noise barriers or introduction of absorptive mater-

ials which reduce total noise transmitted. Attenuation types and relative potential noise reductions are illustrated in Figure 4.

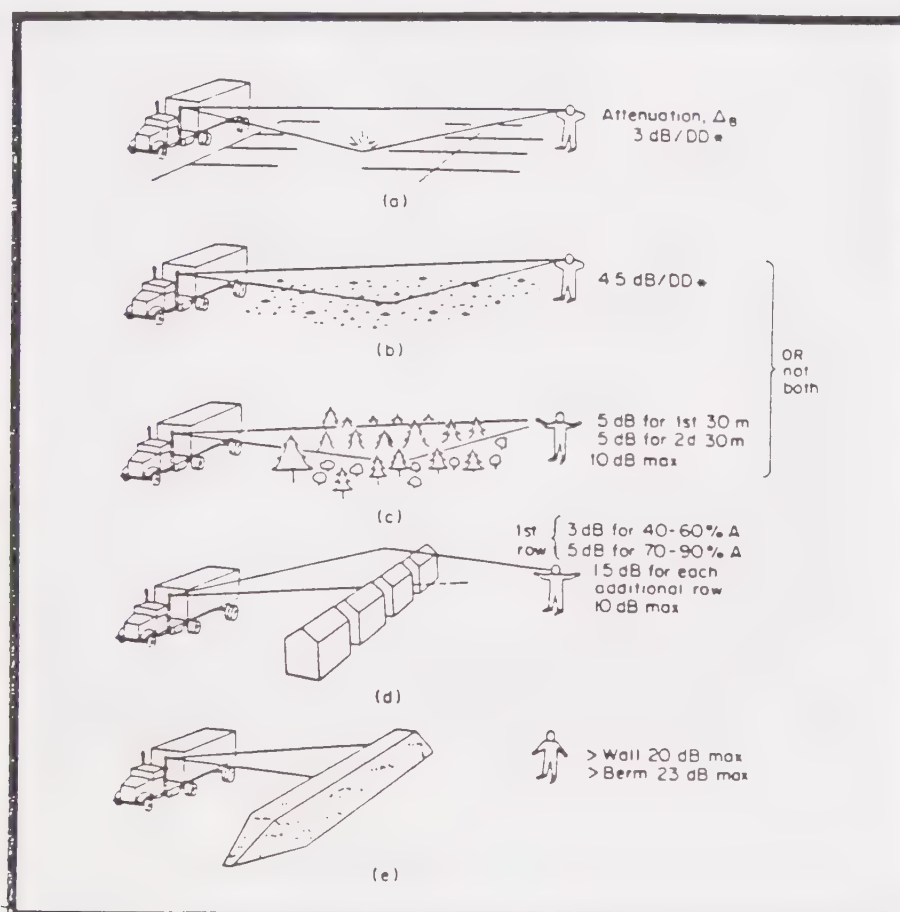


FIGURE 4

SHIELDING FACTORS

(*DD = doubling of distance)

Source: Rau and Wooten, 1980

Increasing the distance between source and receiver will reduce noise levels due to dissipation of the sound energy. "Dropoff" rates over hard surfaces are approximately 3.0 dB per doubling of distance (DD) and up to 4.5 dB/DD over "soft" surfaces such as grass or landscaping (Rau and Wooten, 1980).

Introduction of absorptive materials between source and receiver will tend to further reduce transmitted noise levels. As mentioned, a "soft" ground surface between source and receiver will reduce reflected noise and increase the dropoff rate. Increasing the density and height of vegetation can increase the dropoff rate significantly if the vegetation belt is sufficiently dense and wide. Dropoff rates of 5 decibels for each 30 meters (approximately 100 feet) of very dense landscaping can occur to a maximum of 10 dB (Rau and Wooten, 1980). Absorptive materials can also be incorporated into barriers, discussed below, to reduce reflection to other areas and intensification of pre-existing noise levels.

Barriers are the most common treatment of the transmission path and may involve topography (i.e., hills), walls, berms and building siting. Noise from a gravel or lumber operation, for example, can be significantly attenuated by piling of products around the site perimeter.

The solidity, height and mass of the barrier are each critical to its effectiveness in noise reduction. For example, a row of buildings, separated from each other will be less effective than a solid row and a board fence less effective than a concrete block wall. Interestingly, berms can provide an additional 3 dB of noise reduction compared to a wall of equivalent height (Rau and Wooten, 1980). Limits of reduction for various barrier types are illustrated in Figure 4.

The effectiveness of a solid barrier is related to the change in the path-length distance, as illustrated in Figure 5. Potential reductions in noise levels are logarithmically related to the "Fresnel Number" which is the path-length difference ($A+B-C$) multiplied by a constant (3.21). Thus, the degree of interruption of the line-of-sight between source and receiver reflected in the "Fresnel Number" is the primary influence on barrier effectiveness.

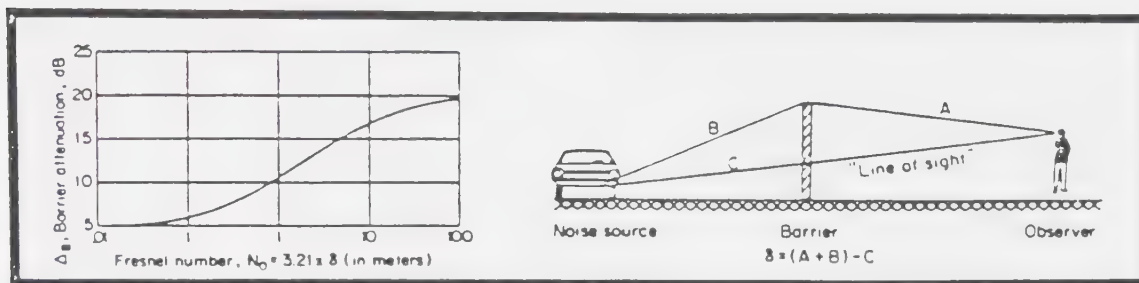


FIGURE 5

TRAFFIC NOISE BARRIER ATTENUATION
VS. FRESNEL NUMBER N_0 FOR
INFINITELY LONG BARRIERS

BARRIER GEOMETRY AND PATH-LENGTH
LENGTH DIFFERENCE

Source: Rau and Wooten, 1980

Receiver treatments are limited to structural attenuation features. Potential structural treatments include limitations on window area, double glazing, building orientation, noise-reducing wall, ceiling and floor assemblies and use of absorptive materials in interior spaces.

Typical outdoor-to-indoor noise reduction attributable to a residential structure range between 10 and 15 dB with windows open and other wall penetrations (Dupree, 1975). Structural noise attenuation can increase dramatically when more care is taken to reduce wall penetrations, limit window area and provide additional insulation. Potential structural noise attenuation ranges between 17 and 50 dBA depending on window type, percentage of window area, ventilation systems and floor, ceiling and wall assemblies in the structure. A typical wood-sided home, insulated, with wood/glass windows would reduce noise levels by 26 dBA with 30% window area on the affected wall. The same structure with aluminum sliding windows would provide 24 dBA reduction at 30% window area, and structures with fixed windows on the affected wall would produce reductions between 27 and 29 dBA (Dupree, 1975). The addition of storm sashes, additional insulation, closed ventilation systems or other treatments would increase potential noise insulation accordingly.

A study of the potential costs of residential construction to achieve noise reductions in impacted areas by the Parry Company (1983) predicted that reductions of 25 dBA could be achieved using standard construction, single-pane windows, air-tight caulking, limiting wall penetrations and utilizing closed ventilation systems which would avoid the need to open windows. The same study predicted reductions of 30 dB could be achieved with the use of carpeting, special fasteners for indoor wallboard, double-glazed windows, double doors, additional roof sheathing and an independent ventilation system. Reductions of up to 35 dB could be achieved with additional similar measures.

Each of the studies was based on 4 inch walls and batt insulation which is less than typical new construction under California building energy conservation regulations; expectations for California structures under the same conditions could probably be adjusted upwards.

CHAPTER 6.0 COMMUNITY NOISE ENVIRONMENT

This chapter identifies and describes the various noise sources which constitute the major elements of the Arcata community noise environment. Noise sources can be described into two major categories.

The first category would include sources producing a consistent and regular noise output and involving major noise emissions. These sources include mobile corridor sources such as streets, highways and the railroad as well as fixed sources such as industrial operations which operate on a consistent basis.

The second major category includes intrusive noise of an occasional nature. These noise sources do not generally contribute to the overall day-to-day noise environment but, rather, represent intermittent elevated noise levels varying widely in intensity. These sources would include occasional operation of certain industrial facilities such as the rock crusher and concrete batching plants on Giuntoli Lane, construction activities and a variety of noise intrusions normally found in residential communities such as loud parties, barking dogs and power tool use.

Sections 6.1 - 6.4 identify each of the consistent sources, quantify their impact on the noise environment and map the extent of impact where possible. See Noise Contour Map, pocket. Section 6.5 reviews intrusive noise sources which are addressed primarily in Chapter 7, and Section 6.6 presents the results of the community noise survey conducted in conjunction with Noise Element revision.

6.1 STREETS AND HIGHWAYS

Streets and highways in the Arcata planning area are important noise sources. The primary sources are State and Federal highways including 101, 299 and 255. Of less importance with respect to total noise emissions but of local significance in areas proximal to the roadways are City arterial streets including Samoa Boulevard, Giuntoli Lane, and K Street/Alliance Road.

Noise generated by streets and highways within the planning area is described from a model developed by the Federal Highway Administration (FHWA, 1978). Calculations for 1985 and 1995 are based on the average daily traffic (ADT), the day-night split of the daily traffic, truck volume percentages, vehicle speed and roadway characteristics. The calculations yield an L_{dn} noise level at a fixed distance which is then manipulated through other calculations to generate the location of noise contours at 70, 65, 60 and 55 dBA levels.

The most current traffic counts for streets and highways, adjusted for 1985, were utilized to generate 1985 noise levels. Traffic counts for State highways in 1995 were developed with official Caltrans projections as moderated by local staff. Traffic counts in Arcata have been stable or dropping in the last few years and were assumed constant through the planning period.

Calculations were performed for each roadway segment with ADT's in excess of 4000. Roadways with less traffic do not generate significant noise, typically L_{dn} 's of less than 55 dBA within 40 feet of the roadway centerline. Roadways not generating noise in excess of 55 dBA within this area were not mapped but are listed in Table 4.

The model for calculating highway noise is, of necessity, generalized and has certain limitations. The model is designed to account for traffic on a relatively level, free-flowing roadway and does not account for

attenuation of noise by factors such as topography or barriers. Thus, traffic noise levels in the vicinity of traffic control or areas with high reflection values (hard surfaces) will be somewhat higher. Areas influenced by barriers to noise propagation will be somewhat lower (i.e., areas divided from freeway by structures, areas adjoining depressed sections of Highway 101). Gradient should not be a significant influence on the calculated values as the only major roadways with significant gradients are G and H Streets between 11th and 14th Streets.

The reader must be cautious in interpreting contour data, both for highways and other sources. Firstly, the accuracy of the model used is, at best, 3 dB plus or minus. Secondly, the model does not account for the variety of existing barriers to noise propagation in the planning area. For example, measured L_{dn} noise levels at monitoring Site #3 (Table 6) were 46 dBA while Highway 101 contours would indicate levels of over 50 dBA; this can be accounted for both in the inaccuracy of the model as well as the attenuating effects of two rows of houses between the site and Highway 101. Thirdly, contours in areas where noise contours for various sources intersect are based on a combination of computation and interpretation. As the basic data is subject to significant inaccuracy, additional potential inaccuracies occur when the data is manipulated further.

Calculations are based on traffic data obtained from CalTrans and the Arcata Department of Public Works. Where actual numerical data was not available (i.e., for some streets actual truck percentage counts were not available) best estimates were developed in conjunction with the appropriate staff. Where significant uncertainty existed, "worst case" figures were used.

Traffic data, distance from the roadway to L_{dn} noise contours and L_{dn} levels at a fixed 100 foot distance for reference purposes are shown on Table 4. Roadway noise contours are mapped in conjunction with other sources on the Noise Contour Map, pocket.

6.2 RAILROAD NOISE

Existing railroads within the planning area include the Eureka Southern and Arcata and Mad River Railroads (A&MRR). The Eureka Southern (formerly Northwestern Pacific) maintains a network of low speed track serving a variety of industrial customers within and just outside the City limits. These tracks include the Eureka main line, the Samoa branch, a branch to the Simpson mill on Foster Avenue and the Korblex branch terminating at the A&MRR line to Blue Lake.

The A&MRR, extending from Korblex to Korbel and owned by Simpson Timber Company, is not currently operating. Abandonment has been applied for; private buyers have expressed interest in purchasing and operating the line. For Noise Element purposes, it has been assumed that future operations on the A&MRR will be the same as for the Korblex line.

Eureka Southern operations are currently limited and expected to remain constant through the planning period. Eureka Southern currently operates in the Arcata area once per weekday in the late evenings (after 10:00 p.m.) on the Eureka main line, Samoa branch, Simpson and Korblex lines. A number of options exist for routing through the Arcata area and, due to the railroad's efforts to maximize return from limited business in the Arcata area, there is no defined route or pickup protocol (Hannon, pers. comm.).

Due to the limited projected market in the Arcata area, the railroad does not expect any increase in number of trips per day or significant increase in number of cars by 1995; growth in railroad business is anticipated to be derived principally from the Eureka area (Hannon, pers. comm.).

Table 4

TRAFFIC NOISE DATA
1985

1985										
Roadway/Station	ADT	Day/ Nite	% Trucks		Avg Spd	Ldn@ 100' (dBA)	Distance to Ldn Contour (feet)			
			Med	Hvy			70	65	60	55
Highway 101										
Bayside CO to So G	24600	90/10	3.3	6.1	55	71	116	249	537	1155
So G to 255	24200	"	3.3	6.1	55	71	115	248	531	1144
255 to 14th	22600	"	4.1	7.7	55	71	123	263	566	1216
14th to Sunset	17100	"	2.8	8.2	55	70	102	218	470	1010
Sunset to 299	24200	"	2.8	8.2	55	72	128	276	591	1274
299 to Giuntoli	17500	"	2.6	8.2	55	70	103	221	475	1023
Giuntoli to 200	16000	"	2.5	7.6	55	70	93	201	432	931
Highway 299										
101 to Giuntoli	6500	"	2.7	12.5	55	67	66	139	299	642
Giuntoli to 200	6700	"	2.8	12.9	55	67	67	144	310	668
Highway 255										
W City Limit to K	6500	"	3.0	16.0	35	65	46	97	206	443
K to H	8600	"	"	"	35	66	54	116	248	536
H to G	11200	"	"	"	35	67	64	138	296	637
G to 101	12900	"	"	"	35	68	71	152	325	701
Samoa Boulevard/Old Arcata Road										
Bayside to Buttermilk	4400	95/5	1	1	35	55	-	-	49	105
Buttermilk to Crescent	6000	"	1	1	40	58	-	-	74	158
Crescent to 101	8700	"	1	1	40	60	-	44	95	203
G Street										
Samoa to 7th	3500									
7th to 17th	5200	"	1	0	25	50	-	-	-	49
H Street										
Samoa to 7th	4000	"	1	0	25	49	-	-	-	42
7th to 17th	4500	"	1	0	25	50	-	-	-	44
K Street										
Samoa to 7th	4000	"	2	3	25	54	-	-	42	91
7th to 11th	12600	"	2	3	25	59	-	42	91	195
Alliance Road										
11th to 27th	8600	"	2	3	35	61	-	51	109	234
27th to Spear	7300	"	2	3	25	57	-	-	63	136
Spear Avenue										
West End to Alliance	3100									
Alliance to Janes	5900	"	2	3	35	59	-	39	85	182
Janes Road										
Spear to 101	5900	"	2	3	25	56	-	-	55	118
Giuntoli Lane										
101 to Valley West	7000	"	3	10.5	35	64	-	80	171	369
ValleyWest to West End	5700	"	3	10.5	35	63	-	70	150	322
Valley West										
Giuntoli South 1000'	5000	"	1	0	25	50	-	-	-	48
11th Street										
Union to F	2400									
F to O	4000	"	1	0	25	49	-	-	-	41
O to Q	2600									
14th Street										
B to H	4600	"	1	0	25	50	-	-	-	46
H to Alliance	1600									

Table 5
TRAFFIC NOISE DATA
1995

1995										
Roadway/Station	ADT	Day/ Nite	% Trucks		Avg Spd	Ldne 100' (dBA)	Distance to Ldn Contour (feet)			
			Med	Hvy			70	65	60	55
Highway 101										
Bayside CO to So G	34440	90/10	3.3	6.1	55	72	146	312	673	1447
So G to 255	33880	"	3.3	6.1	55	72	144	309	665	1431
255 to 14th	31640	"	4.1	7.7	55	73	153	329	707	1521
14th to Sunset	23940	"	2.8	8.2	55	72	128	273	587	1264
Sunset to 299	33880	"	2.8	8.2	55	73	161	345	740	1593
299 to Giuntoli	24500	"	2.6	8.2	55	72	128	276	595	1279
Giuntoli to 200	22400	"	2.5	7.6	55	71	116	251	540	1165
Highway 299										
101 to Giuntoli	9100	"	2.7	12.5	55	69	80	174	373	804
Giuntoli to 200	9380	"	2.8	12.9	55	69	84	180	388	835
Highway 255										
W City Limit to K	9100	"	3.0	16.0	35	66	56	121	259	556
K to H	12040	"	"	"	35	67	67	144	312	699
H to G	15680	"	"	"	35	69	80	172	370	798
G to 101	18060	"	"	"	35	69	89	190	408	876

The railroad can generate significant short-term noise. A Eureka Southern run was monitored at a distance of 100 feet yielding the following readings:

Diesel locomotive (closest point)	79 dBA
Locomotive horn (intermittent)	92 dBA
Passing cars (track noise)	69 dBA

Railroad L_{dn} noise projections were generated for 1985 using a model outlined by Rau and Wooten (1980). Calculations are based on number of locomotives, number of cars, train speed and track type. The model assumes that 10 times the number of actual operations between 10:00 p.m. and 7:00 a.m. occurs to account for night time sensitivity. For purposes of analysis, the 1985 model railroad operation is assumed to be one trip in and one trip out with a ten-car load on the Eureka main line, Samoa branch, Simpson and Korblex extension during late evening hours. Calculations assume one trip each for the split tracks through town. Thus, calculations are based on 20 assumed trips where two actually occur and 10 where only one would occur. The difference in L_{dn} 's generated between two and 20 trips is approximately 10 dBA.

Assumptions for 1995 railroad traffic increased the number of cars to 14; this did not, however, significantly affect noise generated or contour location as car/track noise is less significant than locomotive noise. L_{dn} noise contours for 1985 railroad operations are illustrated on the Noise Contour Map, pocket.

The model parameters yield a valid measure of community noise exposure but are somewhat misleading in that high L_{dn} levels are generated by events which occupy a very limited portion of the day. The actual disturbance consists of a short duration, high magnitude which may cause significant sleep disturbance.

6.3 STATIONARY SOURCES

Stationary sources within the planning area consist of wood products manufacturing operations, aggregate products and concrete batching plants, a sheet metal fabricating facility and trucking and loading operations. Although many of these uses are distributed throughout the planning area, they are concentrated in three main areas:

1. Samoa Boulevard west of Highway 101.
2. Giuntoli Lane and Boyd Road.
3. West End Road.

Major sources of noise from these operations can be divided into two categories: stationary equipment and machinery and on-site mobile equipment such as loaders, trucks and forklifts.

Simplifying the noise output of the various uses to the L_{dn} descriptor is limited by the intermittent nature of many of the operations. In addition, the variables involved in mobile equipment use on certain properties makes accurate modeling within the scope of the Noise Element revision impossible. Operations which are intermittent or which involve the use of mobile equipment would be considered as "intrusive" noise sources and treated as such. Intermittent sources of significance are listed below and described as to the type of operation and relative noise levels generated during operation of noise-generating equipment.

Redwood Empire Aggregates. This aggregate crushing, sorting and washing facility located on Giuntoli Lane consists of numerous conveyors, a gravel screen and a washing and drying facility. The gas-fired dryer is the principal source of noise on the site and drowns out

noise generated by on-site mobile equipment when operating. Measured noise levels vary between 86 and 88 dBA at a distance of 150 feet. This equipment operates intermittently during the day; when the dryer is not operating, conveyors are barely audible above traffic noise at Giuntoli Lane.

Eureka Sand and Gravel. Also located on Giuntoli Lane, this operation involves relatively consistent use of on-site mobile yard equipment and truck ingress and egress; the batching plant operates intermittently, producing noise levels of 68 dBA at 100 feet. The batching plant is immediately adjacent to the Lazy J Trailer Park and is reportedly "very loud" to residents.

Arcata Redi-Mix. Located on Boyd Road, this batching plant operates intermittently. This plant was not found operating during field investigations but is also very close to the Lazy J Trailer Park.

Cascade Products. This wood byproduct (mulch, compost) company, located on Foster Avenue, involves intermittent use of reduction machinery (chipper, hogger) to generate volumes of wood product. Day-to-day use appears to be confined to the use of a forklift for loading product.

Trucking and Loading firms. These firms include Wayne Bare, Joe Costa, Dutra, Viking and Humboldt Loaders. Each of the uses, concentrated in the West End Industrial Park, involves the regular use of on-site mobile equipment and/or trucks.

Schmidbauer Cold Deck. Schmidbauer Lumber of Eureka is currently decking logs at this 10th and "O" Streets site. Early morning truck traffic and use of decking equipment generates significant noise levels in the adjoining residential area.

Donel Products. Located between 9th and 11th Streets on "N" Street, this milling and car loading facility operates intermittently.

Relatively consistent stationary noise sources were evaluated in terms of their potential off-site effects on residential areas or other sensitive land uses. Only three of the stationary sources identified produce off-site noise levels of concern and are described in subsequent paragraphs.

Interestingly, the most major manufacturers produce the least off-site noise. Manufacturing operations at Simpson Lumber, on Foster Avenue, do not generate noise which is audible above the day or night ambients on Foster Avenue less than 100 feet from the plant. Peak noise levels are generated by yard equipment; however, even these intermittent peaks are less than 50 dBA.

The complex of Louisiana Pacific, Britt Lumber and businesses occupying the Mad River industrial building produce levels which would be significant if located immediately adjacent to a residential area but are not within the existing industrial area. Noise levels at Louisiana Pacific's West End Road frontage are between 60 and 70 dBA, generally. Existing structures, log decks and distance reduce the noise transmitted easterly toward the Aldergrove residential area significantly. Day and night L_{eq} 's on Aldergrove Road at the toe of the hill are between 46 and 50 dBA and 40 to 45 dBA, respectively.

Humboldt Redwood, located south of Vaissaide Road, produces no significant noise at the site boundary. Noise levels measured during mill operation were less than 40 dBA on Vaissaide Road.

Johnson Products, a sheet metal fabricating company located at I Street and Samoa Boulevard, operates during daytime hours and emits significant noise in a northerly direction only, producing noise levels of less

than 50 dBA at the north line of Samoa Boulevard.

Stationary sources producing potentially significant noise include Mission Fence, on St. Louis Road, Reid and Wright at 17th Street and Alliance Road and PVM Products on Samoa Boulevard west of the railroad crossing. Mission Fence and Reid and Wright operate during daytime hours and do not generate nighttime noise; PVM was observed operating during the evening hours. L_{dn} 's for each of these uses are reflected on the Noise Contour Map where contour "bulges" illustrate the extent of these facilities' effects on community noise levels.

The off-site influence of several of the stationary sources including Redwood Empire Aggregates, Eureka Redi-Mix and Mission Fence are significantly influenced by the presence of on-site noise barriers. In the case of the aggregate operations, these barriers are sand and gravel piles and, in the case of Mission Fence, stacks of wood product located along the site perimeter. These barriers significantly reduce the influence of noise on adjoining land uses sheltered by the barriers, demonstrating the effectiveness of barrier attenuation and suggesting methods of attenuating noise from other sources.

6.4 AIR TRAFFIC NOISE

Air traffic noise is not a significant concern within the Arcata planning area. Approach paths to the Arcata/Eureka Airport avoid the City proper and do not generate significant noise. Air traffic over the planning area is limited to occasional commercial and recreational light aircraft, light private helicopter traffic and occasional patrols by U.S. Coast Guard units stationed at Arcata/Eureka Airport. No part of the planning area lies within airport noise impact zones defined in the Noise Element of the Humboldt County General Plan (1977).

6.5 INTRUSIVE NOISE SOURCES

Intrusive noise sources include intermittent industrial and commercial uses described in Section 6.3 as well as sources of perhaps less magnitude but of definite perceived importance.

Curiously, the primary noise sources described in Sections 6.1, 2 and 3 are not, as described in the following chapter, the major causes of noise-related complaints within the planning area, perhaps due to acceptance or conditioning of residents to the presence of these sources. Complaints are more commonly oriented toward occasional disturbances not assignable to a particular land use, geographically distributed throughout the City and common in residential areas. Statistically, these sources cannot be quantified except in terms of complaints received as described in the following chapter. These sources include:

- Loud parties and music
- Barking Dogs
- Construction activity
- Firecrackers, other reports.
- Loud vehicles and speed exhibition
- Verbal disputes
- Fire Department siren

6.6 COMMUNITY NOISE SURVEY

The ONC Guidelines suggest that noise elements contain a community noise survey based on field measurement. The purposes of the community noise survey are to gain a direct understanding of community noise levels,

check calculated noise levels, provide a basis for potential future regulation and provide site-specific monitoring of noise-sensitive uses.

A community noise survey was conducted in conjunction with Noise Element revision and assessed existing noise levels at 14 monitoring stations distributed within the Arcata city limits. Outlying stations would be indicative of noise levels in rural unincorporated areas.

Station selection was oriented toward representation of noise levels in the neighborhoods defined in the 1980 census and the provision of specific data for noise-sensitive land uses identified in Chapter 7. Each census neighborhood and each noise-sensitive land use is represented by at least one monitoring station. The stations and represented areas are listed in Table 6; locations are shown on Figure 6.

TABLE 6
NOISE MONITORING STATIONS

Site No.	Station Description	Neighborhood Represented	Noise-Sensitive Uses Represented
1.	Valley East & Hallen	Valley West	N/A
2.	Janes at Mad River Hospital	Pacific Union (Unincorp)	Mad River Community Hospital Pacific Union School My Friends House (Rest Home)
3.	Alliance and Leon	Spear	N/A
4.	California and Greenbriar	Preston Heights	Bella Vista (Rest Home)
5.	Baldwin at Sunset School	Sunset/Westwood	Sunset School
6.	S and Zehnder	Bloomfield	Bloomfield School
7.	16th and L	Arcata Heights	Arcata High School
8.	14th and Union	Bayview/University	HSU
9.	6th and J	Downtown	N/A
10.	13th and F	Arcata Heights	Wanda's Guest Home
11.	383 Bayside Rd. at pasture	Apartment	N/A
12.	Buttermilk at Sunnybrae	Sunnybrae	Sunnybrae School
13.	South G and Front	South G St.	N/A
14.	Old Arcata Rd. at Jacoby Creek School	Bayside	Jacoby Creek School LaDonna's Rest Home

Field noise measurement involved collection of samples to establish L_{eq} 's for representative portions of the day. Monitoring was conducted using a General Radio Company Sound Level Meter Model 1551-C equipped with a type 1560-P5 microphone. The meter was set for "slow response" and A-weighted readings. The equipment was mounted on a tripod approximately four feet off the ground and calibrated prior to monitoring at each site using a Simpson Electric Model 890 Sound Level Calibrator. Noise monitoring was conducted from July 29 to August 1, 1985.

Samples were taken during four representative periods distributed over



Figure 6

the 24-hour day as outlined in Table 7 below. Each sampling period consisted of a series of 20 instantaneous readings taken at 30-second intervals over a ten minute period.

TABLE 7
SAMPLING PERIODS

Represented Period (Hours)	Sampling Period Hours
Night (11 pm-6 am)	1 am - 5 am
Morning (6 am-Noon)	8 am - 11 am
Afternoon (Noon-7 pm)	1 pm - 5 pm
Evening (7 pm-11 pm)	8 pm - 10 pm

The 20 samples for each period and station were logarithmically averaged to derive an L_{eq} for the sampling period; the L_{eq} 's thus derived were assumed for the represented period. L_{eq} 's for the overall day and night periods were generated by averaging assumed noise levels for each day and night period hour. L_{dn} levels were calculated by summing assumed levels for each hour, adjusting hours between 10:00 pm. and 7:00 a.m. by +10 dBA. L_{dn} , day L_{eq} and night L_{eq} levels for each of the sampling sites are shown in Table 8.

TABLE 8
 L_{dn} AND L_{eq} VALUES FOR MONITORING STATIONS

Site No.	Site Description	L_{dn}	Day L_{eq}	Night L_{eq}
1.	Valley East and Hallen	54	52	39
2.	Janes at Mad River Hospital	50	48	36
3.	Alliance and Leon	46	44	31
4.	California and Greenbriar	48	46	34
5.	Baldwin at Sunset School	52	51	32
6.	S and Zehnder	50	50	33
7.	16th and L	51	48	38
8.	14th and Union	53	51	38
9.	6th and J	56	55	38
10.	13th and F	55	54	39
11.	383 Bayside Rd. at pasture	48	48	34
12.	Buttermilk at Sunnybrae School	51	48	46
13.	South G and Front	57	56	39
14.	Old Arcata Rd. at Jacoby Creek School	54	52	40

6.7 ZONES OF EQUAL NOISINESS

Based on calculated and measured noise levels, Arcata can be divided into broad categories of generally consistent noise and land use. Most of the City, with the exception of areas in the immediate vicinity of major roadways, is characterized by L_{dn} 's below 55 dBA. Areas nearer Highways 101 and 299 may experience L_{dn} 's in excess of 70 dBA.

Zones of generally consistent noise and land use are categorized as

follows and shown on Figure 7. Areas with L_{dn} noise levels in excess of 65 dBA are not shown graphically as they extend less than 250 feet from the freeway centerline.

Noisiness:

Quiet	$L_{dn} < 55$ dBA
Moderately Noisy	$L_{dn} 55 - 65$ dBA
Very Noisy	$L_{dn} 65+$

Land Use:

Open Space
Single-Family Residential
Commercial/Multi-family Residential
Industrial and Heavy Commercial

CHAPTER 7.0 COMMUNITY NOISE SENSITIVITY

7.1 NOISE-SENSITIVE LAND USES

Noise-sensitive land uses are those where relative quiet is essential to or at least desirable for the use and enjoyment of property or satisfaction of a public need. Noise-sensitive land uses may include residential areas, transient lodging, schools, libraries, churches and in-patient medical facilities. Other land uses including industrial, commercial and active park and recreation uses are less sensitive to noise. The relative sensitivity of various land use types to community noise levels is illustrated in the EPA's Land Use Compatibility Matrix shown in Figure 8.

Highly-sensitive land uses are those where health and safety considerations either require or place a premium on low noise levels. These would include areas or uses occupied by concentrations of sensitive individuals or uses providing exceptional public benefit which would be adversely affected by high noise levels. Highly-sensitive uses would include hospitals, elderly care facilities and schools, among others.

As a part of Noise Element preparation, noise-sensitive land uses within the Arcata planning area have been identified as follows:

- All residential areas
- Mad River Community Hospital
- Arcata High School
- Sunnybrae Middle School
- Sunset Elementary School
- Jacoby Creek School
- Bloomfield School
- Pacific Union School
- My Friends House (Rest Home)
- LaDonna's Rest Home
- Wanda's Guest Home
- Bella Vista (Rest Home)

Noise levels at each of the sites were monitored in conjunction with Noise Element revision. Data, presented in Section 6.6, indicates L_{dn} noise levels do not exceed 55 dBA at any of these sites.

7.2 CITIZEN COMPLAINTS

A review of available information on noise-related citizen complaints supports the findings of residential sensitivity described above and reveals additional information on the nature of Arcata area residents' sensitivity to noise.

Agencies potentially receiving noise-related complaints were contacted during Noise Element preparation. Interestingly, most of the agencies have received few or no complaints in recent years. The bulk of recorded complaints received were from the Arcata Police Department and, secondarily, the Department of Community Development. Complaint contacts are summarized below.

CALTRANS - The Operations Department would be the principal recipient of noise complaints. No complaints have been received by this department in the last five years (Long, pers. comm.).

EUREKA SOUTHERN RAILROAD - Telephone contacts with staff indicate no noise complaints have been received (Eureka Southern staff, pers. comm). Attempts to contact senior staff were, however, unsuccessful.

LAND USE COMPATABILITY FOR COMMUNITY NOISE ENVIRONMENTS

LAND USE CATEGORY.	COMMUNITY NOISE EXPOSURE L _{dn} OR CNEL, dB					
	55	60	65	70	75	80
RESIDENTIAL – LOW DENSITY SINGLE FAMILY, DUPLEX, MOBILE HOMES						
RESIDENTIAL – MULTI. FAMILY						
TRANSIENT LODGING – MOTELS, HOTELS						
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES						
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES						
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS						
PLAYGROUNDS, NEIGHBORHOOD PARKS						
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES						
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL						
INDUSTRIAL, MANUFACTURING UTILITIES, AGRICULTURE						

INTERPRETATION



NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



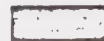
CONDITIONALLY ACCEPTABLE

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.



NORMALLY UNACCEPTABLE

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

Source: Office of Noise Control, 1975

Figure 8

COUNTY PLANNING DEPARTMENT - Staff responsible for Noise Element preparation (Parker, pers. comm.) indicated no knowledge of any noise complaints from the Arcata area in the last five years.

COUNTY PUBLIC HEALTH DEPARTMENT - The Department Director (Arnold, pers. comm.) indicates the Health Department receives approximately two complaints per year from the Arcata area. Subjects are lumber mill operations and crowing roosters.

COUNTY SHERIFF'S DEPARTMENT - A spokesperson from the Department (McClelland, pers. comm.) indicates few complaints are received, principally related to vehicle noise and can remember no complaints regarding stationary sources. Multiple complainants are encouraged to petition the District Attorney's office to issue a "nuisance complaint".

HUMBOLDT STATE UNIVERSITY POLICE DEPARTMENT - Conversations with the Department investigator (Jones, pers. comm.) indicate noise-related complaints from Arcata citizens are few and are usually received in groups of 5-10 related to loud parties or major events on campus.

ARCATA DEPARTMENT OF PUBLIC WORKS - Receives few, if any, complaints; when received, complaints are forwarded to Department of Community Development.

ARCATA DEPARTMENT OF COMMUNITY DEVELOPMENT - The DCD does not maintain records of all complaints received; construction-related complaints are logged, if recurring (Kevo, pers. comm.). DCD noise files indicated problems with the self-serve car wash and loading operations in evening and late night hours as well as a number of complaints regarding undomesticated animals. These complaints are discussed in the following section together with complaints received by the Arcata Police Department.

ARCATA POLICE DEPARTMENT - The Police Department receives by far the largest volume of noise-related complaints of any agency contacted. A review of the daily complaint logs for a one year period (July, 1984 to July, 1985) revealed a total of 384 noise-related incidents which were recorded by type, time of day and street address.

Complaint Types

Interestingly, noise complaints are not caused by the major constant sources of noise within the community (i.e., freeway, railroad noise) but, rather, intrusive noise sources. In the period of review, no complaints were registered regarding these major sources. Predominant types of noise complaints received are shown in Table 9 in five categories encompassing 93% of the total complaints:

TABLE 9
NOISE COMPLAINT SUMMARY

Complaint Type	Total	% Total
1. Loud parties/music	210	54.6
2. Barking dogs	56	14.6
3. Loud yelling, screaming	30	7.8
4. Verbal dispute/abuse	30	7.8
5. Firecrackers, gunshot, backfire	22	5.7
6. Vehicles (loud cycles, racing, trucks)	<u>10</u>	<u>2.6</u>
TOTALS	358	93.1

The 26 remaining miscellaneous complaints also support the predominance of intrusive noise as the major source of complaints and include noisy children (6), car repair (2), dog and cat fights, crowing roosters and operation of minor equipment.

Time Distribution of Complaints

The time distribution of complaints clearly reflects the higher sensitivity of the evening and night-time periods. The vast majority of complaints were received between the hours of 10:00 p.m. and 7:00 a.m. and over 14% of the complaints were received in the three hour evening period as opposed to 17% in the 12 hour daytime period. Total complaints distributed over day, evening and night periods are shown in Table 10:

TABLE 10
TIME DISTRIBUTION OF COMPLAINTS

Time Period	Total	% Total
7:00 a.m. - 7:00 p.m.	66	17.2%
7:00 p.m. - 10:00 p.m.	55	14.3%
10:00 p.m. - 7:00 a.m.	<u>263</u>	<u>68.5%</u>
TOTAL COMPLAINTS:	384	100.0%

Qualitatively, the Police Department indicates that the primary reason for noise-related complaints is "sleep disturbance".

Geographical Distribution

The majority of complaints received were from residential areas of the City, supporting the general sensitivity of these areas. Additional review of the complaints and conversations with the Arcata Police Department highlighted concentrations of complaints within certain neighborhoods. The number of complaints associated with these neighborhoods by no means represents a majority of the complaints received, but serves to indicate problem areas. It should be noted that the reason for geographical concentration would appear to be the presence of a concentrated noise source, i.e.,

apartment areas where parties, domestic disputes, etc., are more frequent, and where population density is higher. Areas with relatively high concentrations of noise complaints are listed below:

100 Block South G Street
100 Block Samoa Blvd.
300 Block Laurel
400 Block Union Street
2500 Block Alliance Road
Plaza
2600 Block LK Wood Blvd.
Redwood Park
Hallen Drive
Town and Country Trailer Park

7.3 OTHER MISCELLANEOUS NOISE PROBLEMS AND COMPLAINTS

Conversations with City staff and community members indicated several other noise problems of note and which are not reflected in noise complaint files. These problems are listed and summarized below:

Refrigerated trucks. Refrigerated trucks arriving at points of delivery in late evening hours are left parked overnight with refrigeration compressors running while the driver presumably sleeps elsewhere. These events are primarily related to the Uniontown and Sunnybrae Shopping Centers. The Arcata Police Department attempts to find the driver and eliminate the noise whenever possible (Brown, pers. comm.).

Arcata High School Traffic. Heavy and often noisy traffic occurs in this area before and after school and during lunch hours and is characterized by speed exhibition and related noise (Brown, pers. comm.).

Construction noise. The Arcata Department of Community Development often receives complaints regarding construction beginning early in the morning but generally does not respond if construction begins after 7:00 a.m. Contractors may be requested to adjust hours of operation upon repeated complaints (Kevo, pers. comm.).

Non-domestic Animals. Crowing roosters have, in particular, been a significant source of complaints in residential areas. These complaints are now substantially controlled by the Animal Keeping Ordinance incorporated in the Land Use and Development Guide.

Organized Events. Dances, loud music and boisterous groups in local streets had, until recently, been a significant local noise problem. The severity of these problems has been reduced by institution of a permit process administered by the Department of Parks and Recreation (City facilities) and the Police Department (private facilities) (Jones, Brown, pers. comm's.).

10th and K Car Wash. Random complaints have been received by the DCD regarding late-night use of this facility and requesting regulation of hours of operation. No known action taken.

S and H Auto Wreckers. Off-hours operation of a portable vehicle smasher received complaints. A special agreement with the City now limits hours of operation of this equipment (Kevo, pers. comm.).

Fire Siren. The siren for the mainly volunteer Arcata Fire District, located at 9th and F Streets, generates significant local noise during its daily noon sounding and when sounded for emergency calls. The siren produces over 106 dBA at the back of a nearby office building (850 G Street) and interior noise levels of up to 74 dBA. Sounding of

the horn can be a significant impediment to indoor conversation in plaza area offices and Arcata City Hall during 70-second soundings for emergency calls.

The District attempts to minimize emergency siren sounding by limiting its use to potentially major events when as many volunteers as possible must be summoned. The District is currently limited to the siren as a means of communications with the bulk of its mobile volunteers. The District currently has three remote "beepers" and would like to acquire more as a means of summoning personnel. Due to budget constraints, however, beepers can only be acquired when funds are donated. As a result of a service club donation, four more beepers will soon be available; a total of 30 would be required to avoid emergency siren use. Even if emergency sounding could be eliminated, the District feels retention of the siren and, probably, noontime sounding would be required to maintain backup communications and civil defense capability.

7.4 EXISTING NOISE REGULATION

Federal and State Regulation

The Federal and State governments have largely left the regulation of community noise to the local agency, except with respect to transportation systems with noise impacts extending beyond the community level. The Federal government establishes emission standards for new noise-generating products, regulates aircraft emissions and airport operations and the operation of interstate trucking. The Department of Housing and Urban Development sets noise acceptability standards for housing projects receiving federal financial assistance (County of Humboldt, 1977).

The California Department of Transportation, Division of Aeronautics, also regulates aircraft operations and establishes noise standards near airports. The State has established motor vehicle emission standards in the Motor Vehicle Code. CalTrans is required to provide mitigation for State highway noise near specified schools, and the State Department of Housing and Community Development has established standards for insulation of multi-family residential structures. The California Government Code (Section 65302(f)) requires the inclusion of a Noise Element in City and County General Plans (County of Humboldt, 1977).

Federal and State regulatory responsibilities are summarized in Table 11.

City of Arcata

Noise regulations adopted or utilized by the City of Arcata are fairly limited. Codified, adopted and informal regulations are summarized below.

Codified Regulations

California Penal Code, Section 415 is a general regulation prohibiting disturbance of the peace. The City Police Department can use PC 415 to deal with noise problems; however, its effectiveness is limited as the Code is general and without specific standards.

The California Motor Vehicle Code regulates vehicular noise emissions under certain specified operating conditions. The Police Department is responsible for enforcing the Vehicle Code.

The City is in the process of adopting an Alarm Ordinance which will require permits from the Police Department for all audible alarms, set limits for alarm sounding and establish penalties for excessive false alarms. The ordinance does not govern the loudness of alarms.

Table 11

SUMMARY OF FEDERAL AND STATE REGULATIONS

	RESPONSIBLE AGENCY	REGULATION/STANDARD	NOISE SOURCE REGULATED	SUMMARY
FEDERAL	Environmental Protection Agency	Public Law 92-574 (Noise Control Act of 1972)	All	Gives EPA responsibility to identify noise sources, set standards for limiting emissions, publish health and welfare criteria, set product labeling standards and recommend aircraft standards.
	Federal Aviation Administration	FAR Part 36	Aircraft	Sets emission limits for aircraft and specified flight conditions for type certification.
	Federal Highway Administration	PPM 90-2	Highways, outdoor noise environment	Sets land use compatibility requirements for developments adjacent to Federal-aid highways.
	Department of Housing and Urban Development	Policy Circular 1390.2	Airports, outdoor noise environments	Sets noise acceptability requirements for developments requesting Federal loan assistance.
STATE OF CALIFORNIA	Department of Aeronautics (Caltrans)	California Administrative Code, Title 4, Sub-chapter 6	Airports, Aircraft	Specifies maximum noise exposures for sensitive uses near airports; sets standards for aircraft operations.
	Department of Motor Vehicles	California Vehicle Code Section 23130	Motor Vehicles	Sets noise emission limits for motor vehicles under specified operating conditions.
	Department of Transportation (Caltrans)	Streets and Highways Code	Highways	Requires corrective action when noise levels exceed set limits in nearby schools.
	Commission of Housing and Community Development	California Administrative Code, Title 25, Article 4	Outdoor/Indoor noise environments	Limits interior noise levels resulting from outdoor levels in new multi-family units.
	Council on Intergovernmental Relations	California Government Code, Section 65302(g)	Outdoor noise environment	Requires quantitative Noise Elements in all City and County General Plans.

Source: County of Humboldt, 1977

Ordinance 981. Section 2 of this ordinance prohibits the use of sound amplification systems on City grounds unless a Special Use Permit is secured from the City Council.

Title 4, Chapter 1, Article 2 of the Arcata Municipal Code requires permits for dances. The Police Department administers this Article.

The Land Use and Development Guide (LU&DG), the City's zoning and subdivision code, includes no overall noise regulation; however, noise regulation is addressed and/or inferred in several of the sections:

Section 1-0222, Regulations for the M Industrial District, establishes limits on industrial noise emissions to residential and non-residential areas.

Section 1-0402.6, Conditional Use Permits, allows the City to impose conditions on a project, which is subject to the Use Permit process which are necessary to "carry out the intent and purpose of this Chapter".

Section 3-0202, Home Occupations, prohibits establishment of a home occupation which "Produces evidence of its existence in ...noise...to a degree greater than that normal for the neighborhood".

Article 3, Animal Keeping, regulates the keeping of domestic and non-domestic animals and prohibits the keeping of non-domesticated animals in R-M, R-MH and R-H districts.

Adopted Regulations

The City of Arcata has adopted regulations governing the use of the Plaza and other community facilities including the Community Center at D and 14th and the Redwood Lodge at Redwood Park. Permits for use of these facilities, issued by the Department of Parks and Recreation, normally include provisions for control of noise from organized events (Jones, pers. comm.).

Informal Regulations

The Department of Community Development attempts to limit construction activities to the hours of 7:00 a.m. and 7:00 p.m. and will issue written compliance requests to contractors upon citizen complaint.

The Department of Community Development will, upon complaint from area residents, attempt to secure agreements with land owners and use operators, where significant noise is generated, establishing guidelines for operation of these facilities. Past actions have resulted in noise abatement on operating agreements with Humboldt Loaders and S & H Auto Wreckers.

The existing Noise Element (1975) establishes noise standards for siting of new residential development as follows:

Exterior Noise	-	60 dBA (metric unspecified)
Interior Noise	-	45 dBA

and performance standards for industry:

Allowable Noise Levels at Site Boundary:

70 dBA	-	in an industrial park
60 dBA	-	where abutting residential uses

These standards are not, however, incorporated into the LU&DG and may not be consistently applied to project and permit reviews.

**Summary of Human Effects for Outdoor
Day-Night Sound Level of 60 Decibels**

Type of Effect	Magnitude of Effect
Hearing Loss	Will not occur
Risk of nonauditory health effects (stress)	•
Speech** — Indoors	No disturbance of normal conversation. 100 percent sentence intelligibility (average) with no margin of safety
— Outdoors	Moderate disturbance of normal voice or relaxed conversation with 100 percent sentence intelligibility (average) at 0.2 meter
	or
	99 percent sentence intelligibility (average) at 0.6 meter
	or
	95 percent sentence intelligibility (average) at 2 meters
High Annoyance	Depending on attitude and other non-acoustical factors, approximately 9 percent of the population will be highly annoyed.
Average Community Reaction	Slight to moderate; 2 dB below level of significant "complaints and threats of legal action," but at least 11 dB below "vigorous action" (attitudes and other non-acoustical factors may modify this effect)
Attitudes Towards Area	Noise may be considered an adverse aspect of the community environment.

* and ** See the notes on page 10-6

APPENDIX A

SUMMARY OF HUMAN EFFECTS FROM VARIOUS OUTDOOR NOISE LEVELS

The following five tables present information on the possible effects on people caused by outdoor-day-night noise levels of 55, 60, and 65 decibels.

Source: EPA, 1981

**Summary of Human Effects for Outdoor
Day-Night Sound Level of 65 Decibels**

Type of Effect	Magnitude of Effect
Hearing Loss	Will not occur
Risk of nonauditory health effects (stress)	•
Speech** — Indoors	Slight disturbance of normal conversation 99 percent sentence intelligibility (average) with a 4 dB margin of safety
— Outdoors	Significant disturbance of normal voice or relaxed conversation with 100 percent sentence intelligibility (average) at 0.1 meter
	or
	99 percent sentence intelligibility (average) at 0.3 meter
	or
	95 percent sentence intelligibility (average) at 1.2 meters
High Annoyance	Depending on attitude and other non-acoustical factors, approximately 15 percent of the population will be highly annoyed.
Average Community Reaction	Significant: 3 dB above level of significant "complaints and threats of legal action," but at least 7 dB below "vigorous action" (attitudes and other non-acoustical factors may modify this effect)
Attitudes Towards Area	Noise is one of the important adverse aspects of the community environment

* and ** See the notes on page 10-6

APPENDIX B

REFERENCES CITED AND PERSONS CONSULTED

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PERSONS CONSULTED

- Arnold, Jeff. Director of Public Health. Humboldt County Environmental Health Department.
- Beardsley, Jerry. Engineer. Arcata Department of Public Works.

PERSONS CONSULTED, CONTINUED

Brown, Mel. Lieutenant. Arcata Police Department.

Dory, Bridget. Secretary. Arcata Department of Public Works.

Hannon, Sherman. Operations Manager. Eureka Southern Railroad.

Jones, Helen. Secretary. Arcata Department of Parks and Recreation.

Jones, Robert. Investigator. Humboldt State University Police Department.

Kevo, Michelle. Secretary. Arcata Department of Community Development.

Klopp, Frank. Director. Arcata Department of Public Works.

Kryla, Margret. Traffic Department. Caltrans.

Long, Jim. Noise Department. Caltrans.

McClelland, Sgt. Watch Commander. Humboldt County Sheriffs Department.

Murphy, O'Dell. Chief. Arcata Volunteer Fire Department.

Parker, Brian. Planner II. Humboldt County Planning Department.

Patek, Stephen. Director. Arcata Department of Community Development.

Quintrell, Don. Traffic Department. Caltrans.

Strahn, Tim. Traffic Department. Caltrans.

Walker, William. Associate Planner. Arcata Department of Community Development.

V. PUBLIC FACILITIES

two-sided
to
two-sided

This chapter presents policies a *two-sided* concerning the provision of public services and the demands of Arcata residents, and also to be *two-sided* supportive of the other General Plan objectives. The successful implementation of Arcata's urban development objectives will depend, to a large extent, on the control exercised over the provision of public services and facilities by both the City of Arcata and Humboldt County. As prime shapers of urban development in the Planning Area, the City and County must cooperate on basic urban development objectives, especially, the delineation of urban and rural uses and the concomitant level of public services required, if many of the ideas contained in this Plan are to be realized.

POLICIES

- 1 The City should support a system of public services and facilities which will:
 - Support and encourage the intended patterns of land use, and discourage premature development or over-development in the absence of necessary municipal improvements;
 - Minimize adverse impact on the environment, and adverse fiscal, economic, and social impacts on the community;
 - Protect the health, safety and general welfare of Arcata residents by providing a level of service consistent with the needs of the individual neighborhoods and the community as a whole.

- 2 The City should support a balanced transportation system which increasingly emphasizes alternative transportation modes and de-emphasizes reliance on the private automobile.
- 3 The City should encourage the continued development and expansion of local and regional public transit systems which are responsive to the changing needs of Planning Area residents.
- 4 The City should ensure that Arcata's existing and proposed street alignment and highway network serve the functions they are intended to serve while protecting the character of Arcata's residential neighborhoods. High quality vistas from scenic routes in the Arcata Planning Area should be preserved. (see Appendix K).
- 5 The City should support bicycling and walking as significant transportation modes which promote personal health and recreational enjoyment while minimizing energy consumption and environmental degradation. The City should correct deficiencies in and expand the existing facilities, and should provide for the design of safe, convenient and attractive bicycle and pedestrian facilities in new public and private development whenever possible.
- 6 The City should program improvements to the water supply, sewage and flood control facilities to correct existing inadequacies, and to provide for the demonstrated long-term needs of Arcata residents, in a manner consistent with urban development policies and with the equitable distribution of costs. The City should encourage the conservation of fresh water and the reclamation and reuse of solid and liquid wastes.

- 7 The City and County should work toward common goals in guiding the future development of the Arcata area. The City should encourage the County to undertake the appropriate actions to achieve consistency between the Arcata General Plan and the Humboldt County Zoning Ordinance and Zoning District map. The City and County should adopt an urban services line, with the City responsible for the provision of urban level services, and with annexation established as a precondition to the extension of these services.
- 8 In order to maximize the use of existing school facilities and minimize the necessity for future facility construction, the City should encourage revisions in the alignment of school district boundaries to better reflect natural constraints and probable future urban growth patterns.

GENERAL PLAN MAP

The General Plan Map indicates the location of major existing and proposed public facilities. The streets and highways in Arcata are referred to in terms of their functional classifications;¹ these classifications are intended to provide a guide to implementing the General Plan proposals, and to provide the necessary information for obtaining state and federal funds earmarked for certain types of streets. For Arcata, the classifications are:

- Type I Principal Arterial: serving statewide and interstate travel.
 Freeway: U. S. Highway 101
 Non-freeway: State Route 255
- Local Arterial: serving intra-urban travel, such as Alliance Road.
- Collector: "collecting" traffic from neighborhoods and channeling it into the arterial system, such as Fickle Hill Road.

¹ See Opportunities, Constraints and Needs report, pp. V-7 and V-8.

Given the adequacy of existing school facilities and of other public buildings, such as the library, and the police and fire stations, no additional land is reserved on the General Plan Map for these uses. However, the quality and adequacy of these services should be continually evaluated, and the construction of new facilities should be programmed when the need is demonstrated.

IMPLEMENTATION

A Necessary improvements to Arcata's public services and facilities should be included within a Capital Improvements Program. Public funds allocated for transportation should emphasize an increasing commitment to public transit, bicycle facilities, and pedestrian facilities.

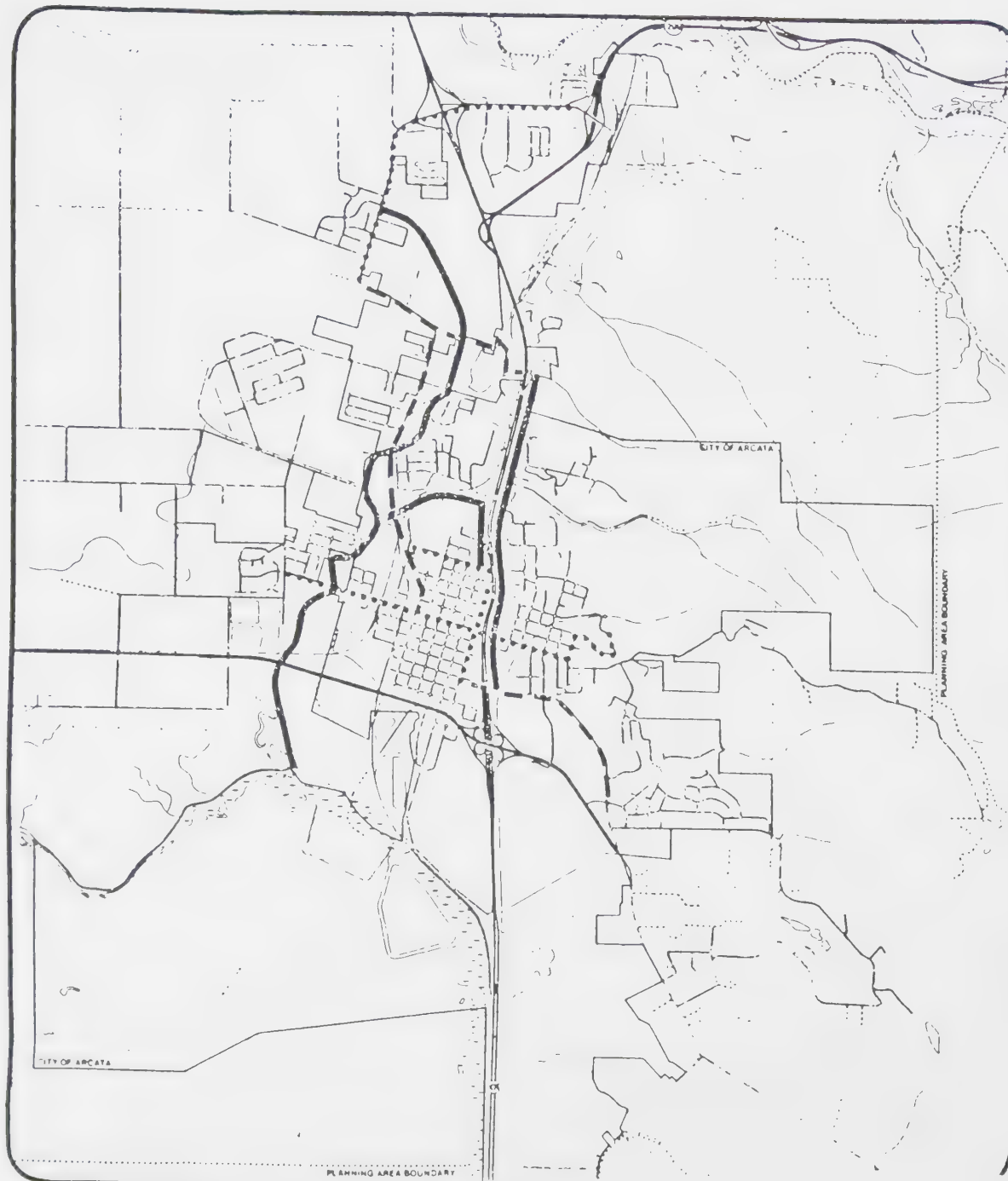
B The City should adopt the functional street and highway classification system, as indicated on the General Plan Map. The major circulation changes include:

- Foster Avenue Extension, east and west of Alliance Road. Foster Avenue will become the major carrier of east-west through-traffic between Spear Avenue and 14th Street, and will relieve Alliance Road of a limited amount of traffic. The development of Foster Avenue as a local arterial should be programmed as a high priority item and should be integrated, if possible, with the redevelopment of the adjoining industrial areas to residential use, and with adequate right-of-way reserved for noise and visual buffers as well as for the inclusion of a bicycle path.
- West Arcata Extension, is intended to provide a westerly by-pass and to further reduce the traffic volume on Alliance Road south of Foster Avenue. The West Arcata Extension is thus indicated as a local arterial. The location of this arterial on the General Plan Map as an extension of V Street is only a tentative routing.

- C** The traffic volumes on local streets in residential areas should be continually monitored, particularly in central Arcata and in the south-of-campus area. As required, the City should initiate measures to discourage excessive through traffic; these efforts could include traffic control devices such as diverters, reduced speed limits, additional stop signs and similar considerations.
- D** The City should designate as scenic routes those roads and highways listed in Appendix K. The appendix also indicates the scenic features and desirable implementation recommendations associated with each scenic route.
- E** The City should program the undergrounding of utilities. Appendix L indicates the recommended utility undergrounding districts and schedule of priorities.
- F** The City should program future improvements to the Arcata and Mad River Transit System (A&MRTS), including:
- Support Facilities, such as the provision of rain shelters in major activity areas, and the introduction of specialized equipment, such as wheelchair lifts, if the demand warrants.
 - Expanded Service, including the purchase of additional vehicles, extended hours of operation, multiple use of equipment, and new routes, such as service to the industrial areas in northeast Arcata and possibly a free shuttle in the downtown area, if the demand warrants.
- G** The City should work closely with the Humboldt Transit Authority (HTA) in coordinating local and areawide public transit systems. The possibility of extending bus service to the Manila area, the opportunity for joint investment in support facilities, such as shelters at major centers of patronage serviced by both the A&MRTS and HTA, should be investigated.

- H** The City should evaluate the existing bicycle route plan for improvements to service, and should consider the provision of bicycle access within the Plaza area and along Arlington and West End Roads. (The Arcata bicycle route system is depicted on Map 3). Additionally, the City should take the following action:
- Dedications. Require the construction of Class I Bicycle Route facilities¹ in the rights-of-way of new arterial and collector streets, and in major improvements thereto, as specified on the Bicycle Route System Map (Map 3). Amend the Planned Development District regulations of the Zoning Ordinance to require the dedication of bicycle route facilities appropriate to the size, density and location of the development. Investigate the feasibility of including bicycle route facilities within creekside areas.
- Support Facilities and Services. Amend the Zoning Ordinance to require that sufficient bicycle storage facilities, as determined by the Planning Director, shall be provided in off-street parking areas in excess of a specified number of spaces. Assure the safety of the bicyclist, particularly along routes shared with automobile traffic, by performing the necessary maintenance, including the removal of hazardous obstructions, and by adding inducements to use, such as improved street lighting, where appropriate.
- I** The City should program new sidewalks and other pedestrian facilities in conjunction with improvements to the other transportation modes where possible, and with related City plans and programs, particularly neighborhood preservation efforts and improvements to the drainage system. The Arcata Pedestrian Plan should include:

¹A completely separated right-of-way designated for bicycle use.



MAP 3 BICYCLE ROUTE SYSTEM

CLASS I.

— COMPLETELY SEPARATED RIGHT-OF-WAY.

CLASS II.

— — PORTION OF THE STREET RIGHT-OF-WAY
DESIGNED FOR EXCLUSIVE OR SEMI-
EXCLUSIVE BICYCLE USE.

CLASS III.

..... STREET RIGHT-OF-WAY SIGNED FOR
BICYCLE TRAVEL.

CITY OF
ARCATA,
CALIFORNIA

GENERAL
PLAN
REVISION
PROGRAM
1975



DUNCAN & JONES
Urban & Environmental Planning Consultants

Schedule of Improvements. With priority attention and resources directed toward hazardous locations, especially areas which are subject to high automobile traffic volumes and which lack sidewalks or any street marking or signalization to assure the safety of the pedestrian. The City should work closely with the local elementary school districts in identifying intersections and other areas which are hazardous to children, and in providing safe crossings.

Together with specifying the timing and location of facilities, the schedule of improvements should delineate proposed financing, and the distribution of costs between the City and local property owners.

Evaluation of Existing Ordinances and Standards. The dimensional and construction requirements for sidewalks and accessways, and necessary provisions for handicapped persons, should be reviewed and recommendations for amendments to provide the City with more flexibility in addressing particular site and neighborhood conditions should be prepared.

J The City should adopt, with Humboldt County, the necessary powers to undertake the improvement of drainage and flood control in the Planning Area. Since the drainage problems in the Planning Area extend beyond the municipal limits, the City and County should either create a North Bay Drainage Maintenance District, coterminous with Planning Area boundaries, or adopt a joint-powers agreement to finance the necessary improvements. Priority attention should be given to drainage improvements along the McDaniel Slough/Janes Creek system.

CITY OF ARCATA
GENERAL PLAN
COASTAL LAND USE ELEMENT

March 1987

City of Arcata

Stephen M. Patek, Director of Community Development

Bill Walker, Associate Planner

Colleen O'Sullivan, Planning Intern

David Hull, Coordinator for the Arcata Marsh and Wildlife Task Force

Resource Planning and Management

William Farrel

Exhibit "A"

The following zoning description was initially prepared several years ago. The uses permitted in each of the two industrial zones at that time were generally consistent with those allowed in the same industrial zone categories outside the Coastal Zone. Since that time, the City has conducted a City-wide survey of the existing uses within the industrial zones, including those inside and outside of the Coastal Zone. In 1991, the City adopted General Plan and Zoning text amendments which recognized many of the uses which already exist in industrial zones.

Proposed new language is shown with underlines. Language to be deleted is [bracketed and stricken through].

EXISTING CONDITIONS [excerpt; beginning page M-3]

Current Zoning

Industrial land south of Samoa Boulevard is flanked by agricultural land to the west, by agricultural land and residential to the east, and by marsh to the south. The marsh is zoned Natural Resource Protection.

Between Samoa Boulevard and the Coastal Zone boundary, industrial land borders agricultural zoning to the west and commercial zoning to the east. The industrial area outside City Limits and within the Coastal Zone is surrounded by agricultural land on three sides and residential land on the north.

Industrial zoned land within the Coastal Zone and City Limits is in the Industrial Commercial or Heavy Industrial Zoning Districts. Industrial Commercial zoning district permits a mixture of commercial and industrial activities, with the more intensive uses requiring a conditional use permit. [general manufacturing; research and development; and wholesale/warehousing uses; Agricultural; commercial; heavy industrial; and public uses may also be permitted in this zone upon the granting of a conditional use permit.] All industrial uses must conform to a series of performance standards that deal with noise, lights, airborne emissions, water quality, traffic, vibrations, electronic interference, and flammable materials. The Heavy Industrial district [does not allow] allows relatively few commercial uses but does allow lumber milling and other heavy industrial uses with a Use Permit.

The 22-acre parcel located within the Coastal Zone but not within the City limits is zoned Limited Industrial or M-L by Humboldt County. The County's M-L Zone is intended to apply to areas in which light manufacturing and heavy commercial uses of the non-nuisance type and large administrative facilities are the desirable predominant uses.

Policy Recommendations [new Policy M-3 to be added]

M-3 New residential uses, other than caretaker's quarters, shall only be permitted in industrial areas where the potential impacts on the residents have been addressed and the residents themselves will not create hardships for the operators of the industries. Special Use Permit criteria have been developed to implement this Policy.

RESOLUTION NO. 878-18

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF
ARCATA APPROVING SUBMISSION OF THE CITY'S REVISED
LOCAL COASTAL LAND USE PLAN AND COASTAL LAND USE
AND DEVELOPMENT GUIDE.

WHEREAS, the City Council of the City of Arcata adopted a Coastal Land Use Element on December 19, 1979 and amendments to the Coastal Land Use Element and a Coastal Land Use and Development Guide on June 6, 1981; and

WHEREAS, the North Coast Regional Coastal Commission certified the amended Coastal Land Use Element and Coastal Land Use and Development Guide including a tentative approval of a categorical exclusion request on June 29, 1981; and

WHEREAS, the California Coastal Commission certified the amended Coastal Land Use Element and Coastal Land Use and Development Guide on October 2, 1981; and

WHEREAS, since that time there have been amendments to the Coastal Act, the City of Arcata General Plan, and the City of Arcata Land Use and Development Guide; and

WHEREAS, the City Council recognized the necessity of amending the Coastal Land Use Element and the Coastal Land Use and Development Guide to reflect changing needs and to make them consistent with the present City General Plan, Land Use and Development Guide and Coastal Act and Coastal Administrative Code; and

WHEREAS, after holding an advertised public hearing, the City Council has found that amendment of the Coastal Land Use Element and Coastal Land Use and Development Guide is warranted by the data presented; and

WHEREAS, the Planning Commission of the City of Arcata, following an advertised public hearing, approved the Amendment and sent its recommendation to the City Council.

WHEREAS, the preparation and adoption of a Local Coastal Program is exempt from the California Environmental Quality Act, pursuant to Public Resources Code Section 21080.9.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Arcata approves submission to the California Coastal Commission of the proposed amended Coastal Land Use Element, Coastal Land Use and Development Guide, Coastal General Plan and Zoning Land Use Map, Coastal Wetlands Map and request for Categorical Exclusion as revised on October 7, and October 21, 1987 and attached as Exhibit "A" to this Resolution; and

BE IT FURTHER RESOLVED that the Director of Community Development is directed to forward a copy of this resolution and said amendment to the California Coastal Commission pursuant to the provisions of Public Resources Code Sections 30000 et seq.; and

BE IT FURTHER RESOLVED that the following findings are hereby made:

1. The Arcata Local Coastal Program is intended to be carried out in a manner fully in conformity with the provisions of the Public Resources Code Section 30000 et seq.
2. For purposes of State Certification of the City's Local Coastal Program and assumption of Coastal Development Permit jurisdiction, this amendment is submitted as a program that will require formal local adoption after Coastal Commission approval.

DATED: October 21, 1987

ATTEST:

APPROVED:

Aline Harris
City Clerk, City of Arcata

Thea Gast
Mayor, City of Arcata

Clerk's Certificate

I hereby certify that the foregoing is a true and correct copy of Resolution No. 878-18 passed and adopted at a regular meeting of the City Council of the City of Arcata, Humboldt County, California held on the 21st day of October, 1987, by the following vote:

AYES: FULKERSON, GAST, GREEN, PENNISI, REDMOND

NOES: NONE

ABSENT: NONE

Aline Harris
City Clerk, City of Arcata

INTRODUCTION

The Coastal Land Use Element was prepared by the City of Arcata as part of its Local Coastal Program as mandated by the California Coastal Act of 1976. The Coastal Land Use Element is the policy and background information section of the Local Coastal Program. The summary of the policies (Sections I through VI) is also incorporated into the City's General Plan as one of the General Plan Elements.

THE CALIFORNIA COASTAL ACT

The California Coastal Act was passed in 1976. The Act states that the basic goals of the state for the Coastal Zone are to:

- (a) Protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources.
- (b) Assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state.
- (c) Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of private property owners.
- (d) Assure priority for coastal-dependent and coastal related development over other development on the coast.
- (e) Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.

In order to achieve these goals the state established the Coastal Zone and adopted a set of policies for the types of development that are allowed in the zone. It also established procedures for approving permits for allowed development.

In addition, the state has required that each city prepare a Local Coastal Program (LCP) for that portion of the Coastal Zone within its jurisdiction.

THE LOCAL COASTAL PROGRAM

The City of Arcata's Local Coastal Program (LCP) includes the Coastal Land Use Element of the General Plan, the Coastal Land Use and Development Guide (Coastal LUDG), a Coastal Zone Land Use Map showing the coastal zoning districts and a Coastal Wetlands Map. The Coastal Land Use Element establishes the policies of the LCP. The Coastal LUDG is the zoning and subdivision ordinance for the portion of the City within the Coastal Zone.

BACKGROUND

This Coastal Land Use Element was initially prepared in 1979 and updated in November of 1980 and September of 1981. The following people were involved in its preparation and updating:

City of Arcata

Mark Leonard, Planning Director

Coastal Commission

Wayne Woodroof, Coastal Planner

Environmental Analysts

James Butler, Project Manager

James Test, Planner

Wendy Mader, Researcher

Terry Roelofs, PhD., Fisheries Biologist

Ford Hastings, Graphics

The March 1987 version of the Coastal Land Use Element represents a substantial revision of the Element. Various sections relating to housing that are no longer required by state law have been deleted. New sections have been added which include new policies and plans for the Arcata Marsh and Wildlife Sanctuary, Butcher's Slough and related tidelands, wetlands and riparian corridors. A new Coastal Wetlands Map is proposed as part of the Element. And the provisions for the continued operation of farmed wetlands is included as policies.

Sections I through VI of this document are summaries of the recommended policies found in the Appendices.

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References		

Section I. URBAN SERVICES BOUNDARY

- I-1 The City shall, with concurrence from Humboldt County, designate a Urban Services Boundary line as shown on the map in Appendix J of the Arcata General Plan.
- I-2. The City shall not provide urban services, nor approve urban developments outside the Urban Services Boundary. The following Land Use designations are the only designations that shall be considered appropriate for land uses in the Coastal Zone but outside the Boundary:
- . Coastal Agriculture Exclusive
 - . Coastal Natural Resource Protection
 - . Coastal Public Facility
 - . Coastal Public Facility (Parks)
- I-3. Areas inside the Urban Services Boundary but outside the present City Limits shall not be approved for urban development until after they have annexed to the City.
- I-4. The City shall retain discretion to extend domestic water and/or sewer services to existing residential units outside the Urban Services Boundary subject to the following guidelines:
- (a) The extension must be an emergency response to a failure of existing water and/or sewer disposal systems.
 - (b) The capacity of the extension shall be limited to a size adequate to meet the existing residential requirements. No extension of trunk lines or oversized lines shall be permitted.
 - (c) No new or additional uses may be permitted to have access to the extension.
 - (d) No extension shall be permitted to serve uses that are clearly inconsistent with adopted Land Use Plans and Policies.
 - (e) An annexation agreement shall be provided by the property owner.

(f) The City may extend sewer and water service to serve intensive agricultural uses beyond the City limits and Urban Services Boundary subject to the following guidelines:

- (1) The extension shall be only to serve the domestic needs of employees of an agricultural use.
- (2) No new or additional uses may be permitted to have access to the extension.
- (3) No agricultural chemicals or wastes may be discharged into the extension.
- (4) The capacity of the extension shall be limited to a size adequate to meet the needs of the specific agricultural operation and shall be a pressurized system.
- (5) In the event that the agricultural operation for which an extension is made ceases operation, the extension shall be disconnected from the City system and capped.

Section II. COASTAL LAND USE MAP

II-1. The City shall adopt the following Coastal Land Use designations which shall serve as the basis for developing specific zoning districts. These are the same designations as used in the existing General Plan.

Residential

- . Coastal Rural Residential (up to 12 p/na)
- . Coastal Low Density Residential (up to 24 p/na)
- . Coastal Medium Density Residential (up to 45 p/na)
- . Coastal Medium-High Density Resid. (up to 75 p/na)
- . Coastal High Density Residential (up to 115 p/na)

p/na = persons per net acre

Commercial

- . Coastal General Commercial
- . Coastal Central Business District (CBD)
- . Coastal Thoroughfare Commercial

Industrial

- . Coastal Industrial Commercial
- . Coastal Heavy Industrial

Public and Quasi-Public

- . Coastal Public Facility
- . Coastal Public Facility (Parks)
- . Coastal Natural Resource Protection

Agricultural

- . Coastal Agriculture Exclusive (60 ac. min. parcel area)

Section III. ENVIRONMENTAL CONSTRAINTS

III-1. The City shall regulate land use in areas of significant natural hazards in the following manner:

- (a) New Critical Facilities. No new critical facilities shall be permitted to locate in areas of potential liquefaction or within the 100-year flood plain (Table 1).

TABLE 1. CRITICAL FACILITIES

Critical Facilities include: power plants, large dams, civil defense headquarters, major electrical facilities, power and communication sub-stations, hospitals, schools, fire stations, police stations, radio stations, television stations, microwave stations, major public buildings, sewage treatment plants, and water works.

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- (b) Existing Critical Facilities. Existing critical facilities located in areas of potential liquefaction shall not be permitted to expand beyond a cost of

\$50,000 (as of December 1980) with allowances for inflation without requiring a detailed site investigation which addresses the potential for liquefaction and settlement, and develops adequate mitigations satisfactory to the City and to a registered geologist, a professional civil engineer, or a certified engineering geologist who supervises the study. Replacement of existing facilities or structures will not require further site investigation as outlined above. Existing critical facilities located in the 100-year flood plain shall be permitted to expand only if adequate flood control measures are provided and if the expansion cannot be provided for elsewhere due to the nature of the facility.

- (c) Non-critical Facilities. Non-critical facilities shall be permitted to locate or expand in areas of potential liquefaction. Non-critical facilities shall be permitted to locate or expand in the 100-year flood plain only if flood proofing measures which meet flood insurance criteria and which are satisfactory to the City are provided, and if it can be shown that such development would not cause additional flooding and/or drainage problems in other areas.

III-2. For non-critical facilities, the City may require site-by-site soils and geologic engineering studies when the Director of Community Development determines that public health and safety could be affected. These studies shall be done by a registered geologist, a registered civil engineer with expertise in soils, or a certified engineering geologist in areas of potential liquefaction and settlement. Potential hazards shall be evaluated using the ground shaking parameters presented in the Seismic Safety Element. The study should show that the proposed project minimizes the potential hazard to life and health.

III-3. To protect structures and critical facilities in the Coastal Zone, and to provide protection of existing habitat values, the City shall encourage and promote flood protection practices which manage flooding problems on a watershed basis.

- (a) The City shall encourage the expansion of Janes Creek Flood Control District to include the watersheds of Janes, Jolly Giant, Grotzman, Campbell, and Beith Creeks, or shall otherwise coordinate with the County to alleviate existing flooding problems.

- (b) The newly formed district or designated agency shall evaluate alternate flood control measures and select a flood control plan that improves drainage and minimizes potential hazards in the Coastal Zone.
- (c) In evaluating alternates, emphasis shall be placed on improvement of drainage. However, enlarging of existing tidegates, dredging of presently undredged sections of creek, or construction of new structures shall be allowed only when no less environmentally damaging alternate is feasible, only when adequate mitigation is provided, and only when not located within a wetland. If mitigation for said development is provided in the form of a fully approved restoration project such development may be permitted in a wetland.
- (d) The City shall seek funding to develop a comprehensive stream maintenance program for streams within its jurisdiction. This program shall provide for stream rehabilitation projects designed to improve flow capacity, minimize channel erosion, and enhance riparian habitat; annual channel inspection to identify and remove barriers to anadromous fish, debris dams, and obsolete flood control or scientific study facilities.
- (e) The City shall seek assistance and ultimately develop a comprehensive plan that identifies storm drain pollution sources, educates the public and businesses about the nature of waste treatment and its importance to Arcata's creeks, and requires pre-treatment of waste by the identified pollution sources.

III-4. Land Use Designations. Since a significant portion of the developed area of the City of Arcata lies within the high liquefaction potential zone, alteration of the existing land use patterns in the City would not be physically nor economically possible. Present General Plan Land Use Designations and Policies are adequate to insure proper development in the Coastal Zone and need not be altered for Hazard purposes.

III-5. The City shall seek funds to establish a hazard inspection and abatement program to reduce the risk associated with hazardous structures to an acceptable level.

III-6. To protect riparian habitats and to minimize erosion runoff, and interference with surface water flow, the City shall establish Riparian Buffer Areas along all streams within the Coastal Zone. The City shall add a new section, Riparian Buffer Areas, to Article 4 of the City's Coastal Land Use and Development Guide. This new section will formalize the City commitment to protection of riparian habitat by defining and identifying such habitat and by applying the following regulations within the buffer areas.

- (a) New development and redevelopments shall maintain or restore a natural vegetation buffer strip along all designated streams. This buffer strip shall be subject to the following definitions:

Distinct Riparian Vegetation - 100 feet from the outer edge of the existing riparian corridor: all of Jacoby Creek. Existing riparian corridor includes those areas adjacent to the creek that are presently dominated by trees and other vegetation characteristic of streamside vegetation.

Channeled Creeks - 25 feet from the center line of the creek: all of Grotzman Creek, lower Beith Creek, all of Campbell Creek, and Jolly Giant Creek above Butcher's Slough, and Janes Creek above McDaniel Slough;

Sloughs - 25 feet from the outer edge of the slough area, McDaniel Slough, Gannon Slough, and Butcher Slough.

- (b) Indigenous vegetation shall be retained in the buffer areas.
- (c) Fencing that crosses a stream channel, that acts as a barrier to anadromous fish, or acts as a collector for debris shall not be permitted.
- (d) Where opportunities arise, the City shall require fencing along channels to prevent further bank erosion by livestock.

III-7. The City shall seek funding to provide for restoration of the following degraded resources:

- (a) Jolly Giant Creek from Butcher's Slough north to Highway 101.

- (b) James Creek between 11th Street and Alliance Road.
- (c) Campbell Creek, from Samoa Boulevard to 7th Street, in conjunction with the Arcata Community Park development.
- (d) Beith and Grotzman Creeks east of Highway 101 and west of Old Arcata Road.
- (e) Campbell Creek from Samoa Boulevard to Gannon Slough.
- (f) Gannon Slough

III-8. The City shall maintain the Natural Resource Protection designation on all tidelands and water areas of Arcata Bay, and shall declare that these areas are fragile coastal resources that require protection from uncontrolled access. The City shall use the following guidelines when permitting access to these areas:

- (a) Motorized vehicles should be restricted to paved roads and parking lots.
- (b) Pedestrians should be restricted to designated trails and facilities.
- (c) Valid scientific and educational studies of the wetlands and tidelands should be encouraged.

III-9. To protect aquaculture in Arcata Bay, the City shall:

- (a) Ensure that its wastewater discharge does not aggravate existing coliform loading problems in Arcata Bay;
- (b) As part of the stream maintenance program, take measures to reduce coliform loading of perennial streams within its jurisdiction. These measures shall include controlling identified sources of coliform loading such as septic tank leachate and runoff from agricultural operations.

III-10. To encourage additional aquaculture in Humboldt Bay, the City shall continue the development and management of:

- (a) Integrated wetland enhancement, wastewater treatment, and the salmon ranching program.
- (b) The tidelands for commercial and sports oyster production.

- III-11. The City's wastewater reclamation, reuse, and aquaculture project is consistent with Coastal Act Policies and requires no special provisions in Arcata's General Plan.

Section IV. DEVELOPMENT CONSTRAINTS

- IV-1. New development shall not restrict access to the shoreline. Access to coastal areas shall be required for new development. The City shall declare that the tidal and water areas of Arcata are a fragile coastal resource that requires protection from uncontrolled access.

- IV-2. The City shall require a Use Permit or Nature Area Permit for any activity or development proposed in the Natural Resources Protection Zone.

- IV-3. The City shall adopt a Coastal Wetlands Map showing the location of wetlands, riparian corridors and uplands within the Coastal Zone. All development within the areas identified on the map as wetland or riparian corridor shall require compliance with the Coastal Wetlands Development Standards of the Coastal Land Use and Development Guide.

The City shall establish a Wetlands Buffer Area to protect the areas shown as wetlands on the Coastal Wetlands Map. All development within the buffer areas shall comply with the Wetlands Buffer Area Development Standards of the Coastal Land Use and Development Guide.

The City shall designate and zone all areas shown as wetlands or riparian corridor on the Coastal Wetlands Map as either Coastal Agriculture Exclusive, Coastal Natural Resource Protection, or Coastal Public Facility.

- IV-4. Diking, filling, or dredging of Bay waters, wetlands, and estuaries shall be permitted where feasible mitigation measures have been provided to minimize adverse environmental effects, for the following limited uses:
- (a) For incidental public service purposes including, but not limited to, burying cables and pipes, and maintenance of existing dikes and public facilities;
 - (b) To maintain a channel adequate to serve the boat ramp at current levels of use;

- (c) Resource restoration purposes;
- (d) Nature study, aquaculture, or similar resource dependent activities;
- (e) Agriculture within existing farmed wetlands but not including the expansion thereof.

IV-5. The City shall permit shoreline structures (such as dikes or tidegates) that may alter the natural shoreline only to protect existing development only when no other feasible less environmentally damaging alternative is available, and only when not located within a wetland, unless the wetland will be the primary beneficiary of the structure.

IV-6. The City shall not permit disposal of dredge spoils on existing wetlands unless such disposal is necessary for a resource restoration project or the maintenance of existing agricultural operations in farmed wetlands. Fill will be allowed for aquaculture projects if it can be shown that it is necessary for the project and is required to be located within the wetland and there is no other feasible less environmentally damaging alternative.

IV-7. The City shall apply Coastal Agricultural Exclusive zoning to all areas designated for agriculture on the Local Coastal Plan Map. The minimum lot size in the Coastal Agricultural Exclusive zone shall be 60 acres.

IV-8. The Coastal Agricultural Exclusive zone shall include the following:

- (a) The "Permitted Uses" section shall include: "Agricultural structures - includes greenhouses or other nursery structures erected over exposed soil."
- (b) The "Conditionally Permitted Uses" section shall include: "Greenhouses or other nursery structures erected on concrete perimeter foundations may be permitted if no less environmentally damaging alternate is available."
- (c) Commercial greenhouses will not be allowed to locate within a wetland.

- IV-9. Where wetlands are seasonally farmed, continued agricultural use of the wetlands is allowed. Expanding farming operations into non-farmed wetlands by diking or otherwise altering the functional capacity of the wetland is not permitted. Farm-related structures (including barns, sheds, and farm-owner occupied housing) necessary for the continuance of the existing operation of the farmed wetlands may be located on an existing farmed wetland parcel, only if no alternative upland location is viable for such purpose and the structures are sited and designed to minimize the adverse environmental effects on the farmed wetland. Clustering and other construction techniques to minimize both the land area covered by such structures and the amount of fill necessary to protect such structures will be required. The location of the wetlands shall be determined by use of the adopted Coastal Wetlands Map.
- IV-10. If land divisions are allowed creating new parcels mapped as wetlands on the adopted Coastal Wetlands Map, such divisions shall require the recordation of deed restrictions providing that no filling would be allowed on the wetland portion of the parcel in connection with new development other than that permitted under Section 30233 of the Coastal Act or the Coastal Wetlands Development Standards, and that the use of the newly created parcel would be limited to grazing or similar agricultural uses consistent with the Coastal Agricultural Exclusive zoning district.
- IV-11. Private and public non-vehicular recreational activities such as hiking, riding, fishing, hunting, and other recreational activities which do not require permanent structures, facilities, or foundations may be permitted in the Agricultural Exclusive zone if they do not interfere with adjacent agricultural uses, or limit the potential of the site to return to agricultural use or significantly displace the wildlife utilizing the area, especially in wetlands. This recommendation shall be implemented in the Land Use and Development Guide.
- IV-12. The City shall issue Conditional Use Permits in industrially zoned areas for the following heavy manufacturing uses in the Coastal Zone only when no feasible less environmentally damaging alternative is available, and only when adequate mitigation has been demonstrated: Salvage yards, drilling for gas or oil, the smelting and reduction of metallic ores,

manufacturing, refining, and storage of petroleum products, acids, cement, concrete, pottery, asphaltic paving products, lime, explosives, fireworks, gas, glue, gypsum, plaster of paris, and inflammable fluids or gases. Conditions for approval shall include, as a minimum, the following criteria:

- Assurance to the satisfaction of a registered geologist, a registered civil engineer with expertise in soils, or a certified engineering geologist of adequate protection from groundshaking.
- No significant adverse impacts on aquatic habitat.
- Adequate protection from flooding.
- Assurance to the satisfaction of the Design Assistance Committee that visual resources will not be degraded.

IV-13. The City shall issue Conditional Use Permits in industrially zoned areas within the Coastal Zone for animal processing plants only for coastal dependent industries. Conditions of approval shall include, at a minimum:

- Assurance to the satisfaction of a registered geologist, a registered civil engineer with expertise in soils, or a certified engineering geologist of adequate protection from groundshaking.
- No significant adverse impacts on aquatic habitat.
- Adequate protection from flooding.
- Assurance to the satisfaction of the Design Assistance Committee that visual resources will not be degraded.

IV-14. The City shall identify the following areas as Coastal Scenic Areas:

- (a) Arcata Bay tideland and water areas:
- (b) All land designated as Natural Resource Protection on the Land Use Map;
- (c) All land between Highway 101 and Old Arcata Road designated Agriculture Exclusive on the Land Use Map;
- (d) All land on the western Arcata plain designated Agriculture Exclusive on the Land Use Map.

- IV-15. The City shall follow the Environmental Impact Review procedures established in the Land Use and Development Guide for any proposed use in the Coastal Scenic Areas. An initial study that takes visual resources as a consideration shall be prepared to determine the appropriate environmental document. If it is determined that the proposed use would significantly alter the appearance of natural landforms, would significantly alter the appearance of existing land uses, or would significantly block views from existing public thoroughfares to the Bay, then no permit shall be issued unless it can be shown that the proposed use will serve to restore or enhance a visually degraded area.
- IV-16. The City shall designate the following routes as Scenic Routes and shall establish guidelines to retain their scenic features: Old Arcata Road from the 7th Street Overcrossing to Crescent Drive; Bayside Cut-off from Highway 101 to Old Arcata Road; Samoa Boulevard (State Highway 255) from Sunny Brae to Manila; Janes Road from 11th Street to Simpson Mill; Highway 101 from Bayside Cut-off to Mad River; South "I" Street, from Highway 255 south; and South "G" Street from "H" Street to Highway 101.
- IV-17. Billboards and off-site signs designed to be read from any State highway or freeway shall not be permitted in the Coastal Zone.
- IV-18. It is the policy of the City to prevent the additional planting of landscaping along Highway 101 that would interrupt the scenic views from Highway 101 to the Bay or eastward across the agricultural lands. It is further the policy of the City to work with Caltrans, Humboldt County, and the Commission to enhance scenic views along Highway 101.
- IV-19. Development in the Heavy Industrial area bounded by Samoa Boulevard, Butcher's Slough and Gannon Slough should include local native plant landscaping, screenings and other mitigations to ensure compatibility with the educational, recreational, wildlife and other uses of the Humboldt Bay National Wildlife Refuge and the Arcata Marsh and Wildlife Sanctuary.

Section V. URBAN DEVELOPMENT

- V-1. The City has determined that no special allocation of urban services is required in the Coastal Planning Area.
- V-2. The City shall encourage the retention and expansion of commercial visitor serving facilities along Samoa Boulevard within the General Commercial zoning district and along South "G" and South "I" Streets in the Industrial-Commercial zoning district.
- V-3. The City shall require that new development or redevelopment in the industrial area surrounding South "G" Street provide dense landscaped screens along all perimeter lot lines visible from Highway 101.
- V-4. The City shall identify Samoa Boulevard, a State Highway, as a community entryway and seek funding to develop a specific public improvement program between the highway overpass and "K" Street that provides for consistent landscaping, street furniture, and directional signing.
- V-5. The City shall designate the following routes as Public Access Corridors. These corridors should be properly signed and identified to lead the public to approved Bay access points:
- (a) "I" Street from Samoa Boulevard to the Boat Launching Facility should be designated as the major Public Access Corridor.
 - (b) South "G" Street from Samoa Boulevard to Highway 101 should be designated as a Public Access Corridor because of the improved access to the Marsh and Wildlife Sanctuary.
 - (c) Highway 101 from Samoa Boulevard (State Highway 255) south to Bayside Cutoff.
 - (d) Samoa Boulevard from Highway 101 west to Mad River Slough.
- V-6. The City shall encourage the use of Planned Development zoning as a means of providing a variety of housing types, land uses, and sufficient usable open space through innovative design. The Planned Development District should allow diversification in the relationship of buildings, structures, and open spaces while insuring substantial compliance to the base district regulations.

Section VI. PUBLIC FACILITIES

- VI-1. The City shall develop the community park area bounded by Highway 101, Samoa Boulevard, 7th Street, and Union Street as an active use recreational area.
- VI-2. The City shall designate the floodplain along McDaniel Slough north of Highway 255 and south of 11th Street as parkland and identify this area as a passive use recreational area.
- VI-3. The City shall designate the area encompassed by the Arcata Marsh and Wildlife Sanctuary as Natural Resources Protection, and identify the recreational component of the project as a passive use recreational area.
- VI-4. The City shall support the development of access to the Humboldt Bay National Wildlife Refuge, Jacoby Creek Unit.
- VI-5. The City shall encourage the continued use of the tideland, or scientific and educational studies, commercial aquaculture, and recreational boating and fishing.
- VI-6. The City shall maintain the Boat Basin at its current design level of use.
- VI-7. The City shall seek funding to establish interpretive sites along the Arcata Bay shore including a Nature Center and Wildlife Care Center to serve as an educational focal point for Arcata's natural resource areas.
- VI-8. The City shall seek funding to establish a system of foot trails and interpretive sites along the Arcata Bay shore subject to the following guidelines:
 - (a) All planning and development in the area that is both south of Samoa Boulevard and west of Highway 101 and which is identified as wetlands or riparian corridor on the adopted Wetlands Map shall be subjected to review by the Marsh and Wildlife Sanctuary Task Force for consistency with the goals and management of the Marsh and Wildlife Sanctuary.

- (b) Development in the area bounded by Butcher's Slough and Gannon Slough should occur in conjunction with development of the National Wildlife Refuge and the Arcata Marsh and Wildlife Sanctuary.
- (c) Motorized vehicles shall be restricted to paved roads and parking lots;
- (d) Pedestrians shall be restricted to designated trails and facilities;
- (e) Valid scientific and educational studies of the wetlands and tidelands shall be encouraged.

VI-9. The City shall restrict development of the Corporation Yard facilities to its existing boundaries, and shall maintain a landscaped screen along the northern and eastern perimeter of the oxidation pond.

VI-10. The City shall maintain the existing facilities of the Arcata Marsh and Wildlife Sanctuary and construct new facilities consistent with the plan developed by the Marsh Task Force or its equivalent and adopted by the City Council.

Appendix A

TECHNICAL REPORT AND POLICY RECOMMENDATIONS

SHORELINE ACCESS

(Access component as required by Coastal Act)

COASTAL ACT POLICIES (As amended February 1986)

30210. In carrying out the requirements of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.
30211. Development shall not interfere with the public's right of access to the sea where acquired through use, or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.
30212. (a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where (1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources; (2) adequate access exists nearby; or (3) agriculture would be adversely affected. Dedicated accessway shall not be required to be opened to public use until a public agency or private association agrees to accept responsibility for maintenance and liability of the accessway.
- (b) For purposes of this section, "new development" does not include:
- (1) Replacement of any structure pursuant to the provisions of subdivision (g) of Section 30610.
- (2) The demolition and reconstruction of a single-family residence; provided that the reconstructed residence shall not exceed either the floor area, height or bulk of the former structure by more than 10 percent, and that the reconstructed residence shall be sited in the same location on the affected property as the former structure.
- (3) Improvements to any structure which do not change the intensity of its use, which do not increase either the floor area, height or bulk of the structure by more than 10 percent, which do not block or impede public access, and which do not result in a seaward encroachment by the structure.
- (4) The reconstruction or repair of any seawall; provided, however, that the reconstructed or repaired seawall is not seaward of the location of the former structure.
- (5) Any repair or maintenance activity for which the commission has determined, pursuant to Section 30610, that a coastal development permit will be required unless the commission determines that the activity will have an adverse impact on lateral public access along the beach.

As used in this subdivision "bulk" means total interior cubic volume as measured from the exterior surface of the structure.

(c) Nothing in this division shall restrict public access nor shall it excuse the performance of duties and responsibilities of public agencies which are required by Sections 66478.1 to 66478.14, inclusive, of the Government Code and by Section 4 Article X of the California Constitution.

OBJECTIVES

Determine what level of use the ecosystem of the tidal marshland is capable of sustaining and where access points would be located.

EXISTING CONDITIONS

Ownership

Virtually all of the Arcata Bay shoreline is under public ownership or control. The City of Arcata State Tidelands Grant encompasses 1,400 acres of mudflats and adjoining marshes in the northeastern corner of Arcata Bay. The Humboldt Bay National Wildlife Refuge, Jacoby Creek Unit, adjoins the tideland Grant at its southeastern border. The Humboldt Bay National Wildlife Refuge presently encompasses 60 acres of tidelands.

Access

Even though public control of the shoreline has been preserved, actual public access to the shore is limited to the following types and areas:

Pedestrian Access. Pedestrian access areas are mainly used by duck hunters, bird watchers, educational groups, hikers, fishermen, and joggers. Pedestrian access points are well defined and identified. They occur along "H" Street, South "G" Street, and South "I" Street.

Vehicular Access. Vehicular access to the Arcata Marsh and Wildlife Sanctuary is present along "H" Street, South "G" Street, and South "I" Street, and at a station maintained by the National Wildlife Refuge. Access to the Arcata Marsh and Wildlife Sanctuary is restricted to developed parking areas and trails and access to the refuge station is restricted to bonafide research or educational activities.

Boating Access. Small boats may be launched from the City's boat ramp at the foot of South "I" Street, and are sometimes launched from the Mad River Slough area. Canoes and kayaks can also be launched from the "H" Street entrance to the Arcata Marsh and Wildlife Sanctuary into Butcher's Slough and taken south into Arcata Bay. A rock trail allows portage around the southernmost pedestrian bridge across the slough. These boats are predominantly shallow draft scull boats, drift boats, rowing dorys, and sail boats used by duck hunters, bird watchers, and boating enthusiasts. Pleasure boating on Arcata Bay is limited because of a lack of adequate low water channels and channel markings.

Present Use

Present use of Arcata Bay falls into two distinct types - consumptive and non-consumptive uses. Consumptive uses involve the actual removal of individual units, such as fish or waterfowl, by fishermen, hunters, commercial oyster growers, or others. Non-consumptive uses involve nature study, wildlife observations, or scenic enjoyment.

The most significant consumptive wildlife use in Arcata Bay is waterfowl hunting. Most of the hunting is done from temporary blinds along the shoreline or islands. Sculling is also used extensively for taking waterfowl. Hunting is presently prohibited within 100 yards of the Arcata Marsh and Wildlife Sanctuary and Oxidation Pond. Shark fishing and clamming rate as the most popular fishing activities on Arcata Bay. Franklin R. Klopp Recreation Lake, within the Sanctuary, is periodically stocked with trout and supports a related sport fishery. In order to avoid a put-and-take fishery in the lake and thus remain consistent with the goals of the Sanctuary, special State fishing regulations have been placed on anglers at Klopp Lake. The regulations are designed to encourage a quality fishing experience, while at the same time increasing the challenge. California Department of Fish and Game regulations Article 7, section 13.49 limit the take of trout to three per day and the method of take is limited to only artificial lures with a single barbless hook.

Much of the 1500 acres of tidelands under Arcata's control can be leased for commercial aquaculture purposes, particularly oyster farming. The permitting and leasing process for these activities have been in place for a number of years and have been adequate to protect the tidelands from unrestricted growth and environmentally damaging culture techniques.

The heaviest non-consumptive uses of Arcata Bay are wildlife observation, photography, scientific and educational activities, picnicking, and boating. The vast majority of people pursuing these recreational activities use South "I" Street as their main access to the Arcata Marsh and Wildlife Sanctuary and Arcata Bay. Traffic counts on South "I" Street at the Sanctuary entrance and spot use checks by the City of Arcata indicate that over 100,000 people visit the Sanctuary and Bay on an annual basis. The recent addition of another major Sanctuary entrance on South "G" Street will significantly reduce the traffic load on South "I" Street. The Sanctuary and Bay are also used as an outdoor laboratory by HSU undergraduate classes, by College of the Redwoods classes, and by high schools and grammar schools for environmental studies. Since 1962, more than 38 Master's Theses dealing with bay resources have been completed by HSU graduate students in a wide range of majors.

Constraints to Access

Legal or physical constraints. The Arcata Bay shoreline can be divided into four distinct areas for the purposes of reviewing legal or physical constraints - the reclamation dikes, the Arcata Marsh and Wildlife Sanctuary, the City's corporation yard and sewage treatment plant, and the tidelands.

The existing dike along the edge of the Bay from the Mad River Slough east to the Arcata Marsh and Wildlife Sanctuary was built between 1895 and 1915 and is maintained by Reclamation District 768. This District, formed in 1905,

presently consists of 21 property owners and contains 1,340.08 acres. There are 103.52 acres outside the dike which are not included in the District. The District, by means of an assessment against each member property, including the City of Arcata, maintains the large double wooden flood gate at the mouth of McDaniel Slough, several smaller metal flood gates, and approximately four miles of dike. The Board of Directors of the District has jurisdiction over any changes or improvements to the dike. Pedestrian access to the dike is prohibited due to the agricultural activities north of the dike.

The Arcata Marsh and Wildlife Sanctuary covers approximately 160 acres including the majority of the Arcata Bay shoreline within the Arcata City limits. The major components of the Sanctuary are approximately 75 acres of restored wetlands at the foot of South "I" Street; approximately 26 acres of restored wetlands surrounding Butcher's Slough between South "I" Street and South "G" Street; approximately 45 acres of oxidation pond east of the Sanctuary, and 17 acres of restored saltmarsh north of the oxidation pond. At this time access to the Sanctuary is very good through six parking areas, more than 4.5 miles of trails, and the only boat launching facility on Arcata Bay. While access is good, City of Arcata Ordinance 1088 details many use restrictions and prohibitions for the Sanctuary in order to maintain public access and ecological values of the area. Access to any part of the Sanctuary which is not a parking lot, trail, or the boat ramp, requires written permission by the Arcata Director of Public Works or his designee. A permit system in place for three years has been adequate to control and monitor activities in these areas.

Arcata's corporation yard, located at 600 South "G" Street, houses the City's wastewater treatment plant, garage, and the street and utilities maintenance materials and equipment. Public access to the corporation yard is restricted, however, access can be gained by written permission from the Director of Public Works.

State Tideland grants to the City of Arcata in 1913 and 1917 placed 1,500 acres of tidelands under Arcata's control. The area extends roughly from the mouth of Gannon Slough west past the mouth of McDaniel Slough, and south approximately 1.25 miles. Access to the tidelands are somewhat restricted because of the nature of the Bay itself, and the existence of only one boat launching facility. The shallowness of the Bay and the mud bottom restrict almost any travel on the tidelands except by boat. The only boat launching facility is located at the foot of South "I" Street within the Sanctuary. The launching ramp ties into an unmaintained channel that is not navigable at low tides due to the lack of water. Therefore, access to the tidelands are restricted more by environmental conditions than planned management.

The eastern marshes from the City's oxidation pond to the mouth of Jacoby Creek are mainly in government ownership. Access to these areas can be gained by pedestrians from various points along South "G" Street. The Eureka Southern Railroad Line separates the Bay from all public thoroughfares, thereby raising liability insurance problems if unrestricted access across the rail lines is encouraged. Parking space along this area is limited.

Environmental Constraints

Of Humboldt Bay's original 7,000 acres of Coastal Salt Marsh Habitat, only about 600 acres remain. With the exception of Gunther Island, the best salt marsh formations are located along the eastern and northern margins of Arcata Bay.

The salt marsh provides high-tide roosts for herons, gulls, ducks, and shore-birds. One endangered species, the clapper rail, is restricted to the salt marsh. However, the status of the clapper rails in Humboldt Bay is unknown at present, none having been reported since 1966. This habitat supports 114 species of birds and large populations of mice.

Like eelgrass beds of the flats, this habitat is extremely important to the ecology of the Bay. Aside from providing cover, nesting sites, and feeding areas for a diverse bird fauna, the salt marsh is a source of detritus; an energy source for the estuarine food web.

Saltwater marsh is one of the more sensitive habitats found in Humboldt County. Plants are distributed according to well defined zones of tolerance to salinity and saturation rates. Heavy foot traffic is likely to compact the fine silty marsh soils and destroy plant life, thereby creating new channels. The probability follows that users would pioneer new paths to avoid these wet channels; paths would multiply and damage to habitat would be compounded.

Potential Access to Corridors and Sites

As noted previously in this Appendix, access to Arcata Bay and its associated waterfront is now well defined with six parking areas along South "I", "H", and South "G" Streets; a trail network over 4.5 miles long covering over 160 acres; and the only boat launching facility in Arcata Bay. Only one access corridor planned by the City has not yet materialized. This corridor would be a green belt park to be created along Janes Creek and McDaniel Slough from Zehndner Avenue south to the Bay.

A number of limiting factors have kept this corridor from becoming a reality. However, interest has been renewed in public access along McDaniel Slough by recent wetland mitigation bank planning for a 438 acre parcel just west of the Slough. The following list represents the major constraints and concerns that would have to be resolved before this greenbelt park/Bay access corridor could be opened to the public.

1. Access to the park itself is extremely limited. The entry on Zehndner Avenue is constricted by housing built adjacent to the creek on the west and by a church parking lot on the east. This would allow access by pedestrians only. No public parking areas exist in the immediate vicinity of the park. Consequently, the entry point would only be convenient for residents of the surrounding neighborhoods.
2. Extensive alterations to the creek channels and/or the rail line and highway would be required to allow safe passage across the railroad and Highway 255.

3. Although an entry to the park could be developed on the south side of Highway 255, a parking lot would be required to make this entry usable.
4. The park presently passes through productive agricultural land and could create conflicts between recreational uses and agricultural uses.

POLICY RECOMMENDATIONS

- A-1 The City shall declare that the tidal and water areas of Arcata Bay are a fragile coastal resource that requires protection from uncontrolled access.
- A-2 The City shall designate the following routes as Public Access Corridors. These corridors should be properly signed and identified to lead the public to approved Bay access points:
- (a) "I" Street from Samoa Boulevard south through the Arcata Marsh and Wildlife Sanctuary to the Boat launching facility on Arcata Bay.
 - (b) South "G" Street south of "H" Street to Highway 101.
 - (c) Highway 101 from Samoa Boulevard (Highway 255) south to Bayside Cutoff.
 - (d) Samoa Boulevard from Highway 101 west to Mad River Slough.
- A-3 The City shall seek funding to establish a system of foot trails and interpretive sites along the Arcata Bay shore subject to the following guidelines:
- (a) All planning and development in the area that is both south of Samoa Boulevard and west of Highway 101 and which is identified as wetlands or riparian corridor on the adopted Wetlands Map shall be subjected to review by the Marsh and Wildlife Sanctuary Task Force for consistency with the goals and management of the Marsh and Wildlife Sanctuary.
 - (b) Development in the area bounded by Butcher's Slough and Gannon Slough should occur in conjunction with development of the National Wildlife Refuge and the Arcata Marsh and Wildlife Sanctuary.
 - (c) Motorized vehicles shall be restricted to paved roads and parking lots;
 - (d) Pedestrians shall be restricted to designated trails and facilities;
 - (e) Valid scientific and educational studies of the wetlands and tidelands shall be encouraged.

A-4 New development shall not restrict access to the shoreline. Access to coastal areas shall be required of new development.

A-5 The City shall support the development of access to the Humboldt Bay National Wildlife Refuge, Jacoby Creek Unit.

Appendix B

TECHNICAL REPORT AND POLICY RECOMMENDATIONS
RECREATION AND VISITOR-SERVING FACILITIES

COASTAL ACT POLICIES (As amended February 1986)

- 30212.5 Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.
- 30213 (part) Lower cost visitor and recreational facilities shall be protected, encouraged, and where feasible, provided. Developments providing public recreational opportunities are preferred.
- 30214 (a) The public access policies of this Article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:
- (1) Topographic and geologic site characteristics.
 - (2) The capacity of the site to sustain use and at what level of intensity.
 - (3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.
 - (4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.
- (b) It is the intent of the Legislature that the public access policies of this Article be carried out in a reasonable manner that considers the equities and that balances the rights of the individual property owner with the public's right of access pursuant to Section 4 of Article X of the California Constitution. Nothing in this section or any amendment thereto shall be construed as a limitation on the rights guaranteed to the public under Article 4 Section X of the California Constitution.
- (c) In carrying out the public access policies of this Article, the commission, regional commissions, and any other responsible public agency shall consider and encourage the utilization of innovative access management techniques, including, but not limited to, agreements with private organizations which minimize management costs and encourage the use of volunteer programs.
30220. Coastal areas suited for water oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.
30221. Ocean front land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that

could be accommodated on the property is already adequately provided for in the area.

- 30222. The use of private lands suitable for visitor serving commercial recreational facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal dependent industry.
- 30222.5 Ocean front land that is suitable for coastal dependent aquaculture shall be protected for that use, and proposals for aquaculture facilities located on those sites shall be given priority, except over other coastal dependent developments or uses.
- 30223. Upland areas necessary to support coastal recreational use shall be reserved for such uses, where feasible.
- 30224. Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launch facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.
- 30250. (c) Visitor serving facilities that cannot feasibly be located in existing developed areas shall be located in existing isolated developments or at selected points of attraction to visitors.

OBJECTIVES

Determine what type of recreational and visitor serving developments are desirable in north Arcata Bay and what level of use they should be designed for.

EXISTING CONDITIONS

Existing Parks and Recreation Facilities

Public recreational areas and facilities located in the Coastal Zone include the Arcata Marsh and Wildlife Sanctuary and the Jacoby Creek Unit of the Humboldt Bay National Wildlife Refuge. In addition, the tidelands of Arcata Bay are important for hunting and fishing activities. Also located within the Coastal Zone, but well away from the shoreline, are two school playing fields.

The Arcata Marsh and Wildlife Sanctuary covers over 170 acres and all of Arcata Bay's shoreline within Arcata city limits. As recent as 1978, this area consisted of deteriorating mill buildings, an abandoned sanitary landfill, pastureland, and the oxidation pond with its associated wastewater treatment plant. Grants from the California Coastal Conservancy, efforts by a number of volunteers, and progressive thinking by the Arcata City Council

and staff have resulted in a waterfront that has 6 parking areas, and over 4.5 miles of trails winding past 7 different types of wetlands, all within 1/2 mile of downtown Arcata.

Trailheads are located on South "G" Street, "H" Street, and South "I" Street. Each trailhead has parking associated with it. All parts of the Sanctuary can be reached from any of the trailheads.

South "I" Street is the traditional entrance to the Sanctuary and has three parking lots and the boat launching facility to Arcata Bay. Areas reached by the South "I" Street entrance include three freshwater marshes, a brackish lake, the upland area created out of the old landfill, and Butcher's Slough.

"H" Street has a small parking lot (4 spaces) that serves as a neighborhood entrance to the Butcher's Slough area. This entrance serves the residential area on "H" and "G" Streets.

South "G" Street has two entrances to the Sanctuary, one to Butcher's Slough and the old landfill site, and another for the oxidation pond. While the oxidation pond is part of the City's wastewater treatment process, it also represents the largest freshwater impoundment on the Bay's edge, and therefore, valuable wildlife habitat. A grant from the California Coastal Conservancy in 1981 opened up public access along the oxidation pond dike that also includes vistas of the Marsh Pilot Project, the 17-acre saltmarsh, and the wastewater aquaculture facility.

The various wetland habitats in the Sanctuary, and the nearness of the mudflats/bay and forested hillsides have made the Sanctuary one of the most popular areas for birdwatchers. To date, more than 200 species of birds have been sighted at the Sanctuary making the Sanctuary important not only ecologically, but also economically through increased tourism.

Humboldt Bay Wildlife Refuge

Located west of the Eureka Southern Railroad right-of-way and between the oxidation ponds and Bracut Industrial Park, the refuge consists of 65 acres of tideland and salt marshes with one caretaker's cabin. The problems of access across the railroad tracks and inadequate parking limits use of this reserve to research and educational activities. However, a route which would provide foot access to the Refuge from the oxidation ponds is included in a past county-wide trails plan prepared by the County Public Works Department. It was recommended in the Trails Plan Environmental Impact Report that this route be raised on a wooden boardwalk to avoid damage to the marsh. This portion of the trail has not been built as of 1986.

School Facilities

School playing fields at St. Mary's and Bloomfield elementary schools are located well away from the coast in developed residential areas. These parks and proposed additions are described in the City of Arcata Parks, Recreation, and Open Space Master Plan. Existing recreational facilities at St. Mary's include a soccer field, auditorium/gymnasium, library, playground, open field with tires and spools, bike racks, and drinking fountain. No additional facilities are proposed. Bloomfield School contains playground equipment,

open space areas, drinking fountain, tot lot, two basketball courts, three sets of bleachers, parking area, library, soccer field, and two baseball backstops. The construction of an additional tot lot and improvements to the ballfields are proposed. These school fields primarily serve residents in the adjacent neighborhoods.

Existing Visitor Serving Facilities

The north Arcata Bay shore area has not been commercially developed to serve visitor needs for recreation. Private, non-recreation oriented visitor serving businesses within the Coastal Zone are concentrated along Samoa Boulevard and Seventh Street, and consist of gas stations, four restaurants, and a neighborhood shopping center. None of these centers are coastal or water related. A Use Permit has been issued for a Recreational Vehicle Park on South "I" Street, however this project has not been built as of January 1987.

Proposed Park and Recreation Facilities

The Park, Recreation, and Open Space Master Plan

The City of Arcata is currently operating under a proposed Parks, Recreation, and Open Space Master Plan which was adopted in 1979. The Plan consists of several elements, including recommendations for the acquisition and development of various park and recreation sites within the City of Arcata, provisions for the operation and maintenance of existing and proposed parks, and a number of policies which pertain to miscellaneous recreational developments, the operation of the City Parks and Recreation Department, and budgeting of the Department and recommendations for a new "parkland dedication policy" for land development.

Three proposed parks, the Greenview Park, the McDaniel Slough Linear Park, and the Community Park fall within the Coastal Zone.

The Community Park

The Master Plan contains a proposal to establish Arcata Community Park in the 30-acre area bounded by 7th Street, Highway 101, Samoa Boulevard, and Union Street. Included in the proposal are suggestions for both public and commercial facilities.

Public

- 1 Cultural Arts Center
- 1 Concession Stand
- 2 Parking Lots
- 1 Picnic Shelter
- 6 Picnic Tables
- 2 Football/Soccer Fields
- 3 Softball Fields
- 10 Tennis Courts
- 1 Maintenance Structure
- 1 Barbecue (group size)
- 1 Restroom Facility
- 1 Baseball Field

Commercial

Handball Courts
Racquetball (8-10 courts)
Roller Skating Rink
Miniature Golf
Tennis Pro Shop
Pacific Arts Center
Skateboard Park

Old barns on the site would be restored to serve as a community cultural center. This park would draw users from the expanding apartment complexes nearby, from Arcata in general, and from out of town.

The McDaniel Slough Linear Park

Both the Master Plan and the current City General Plan propose a linear park along McDaniel Slough. The park would act as a passive use greenbelt, and an unpaved hiking trail.

The Greenview Park

The Park Master Plan has designated a 4-acre site west of the Greenview Subdivision. This site would serve as a multi-purpose active use park.

The Humboldt County Trails Plan

The Humboldt County Trails Plan, which was prepared by the County Public Works Department and proposes a network of trails throughout the County, describes a route through Arcata called the Bayview Levee Trail. This trail would follow dikes around the edge of Arcata Bay and then enter the National Wildlife Refuge south of Arcata's oxidation pond. Recommendations in the Trails Plan environmental impact report consist, in part, of raising the trail on a wooden boardwalk where it crosses the marshland. This design is favored by the U.S. Fish and Wildlife Service, and would serve to protect sensitive marsh habitat. Specific design features are not available as this trail is still in the planning stage and has not been built as of 1986.

POLICY RECOMMENDATIONS

- B-1 The City shall maintain the Natural Resource Protection designation on all tidelands and water areas of Arcata Bay, and identify these areas as passive use recreational areas. The Arcata Bay tidelands shall also be designated Natural Resource Protection.
- B-2 The City shall designate the area encompassed by the Arcata Marsh and Wildlife Sanctuary as Natural Resource Protection, and identify the recreational component of the project as a passive use recreational area.

- B-3 The City shall encourage the continued use of the tideland for scientific and educational studies.
- B-4 The City shall maintain the existing facilities of the Arcata Marsh and Wildlife Sanctuary and construct new facilities consistent with the plan developed by the Marsh Task Force or its equivalent and adopted by the City Council.
- B-5 The City shall develop the community park area bounded by Highway 101, Samoa Boulevard, 7th Street, and Union Street as an active use recreational area.
- B-6 The City shall designate the floodplain along McDaniel Slough north of Samoa Boulevard and south of 11th Street as park land and identify this area as a passive use recreational area.
- B-7 The City shall encourage the retention and expansion of commercial visitor serving facilities along Samoa Boulevard within the General Commercial zoning district, and along South "G" Street and South "I" Street in the Industrial Commercial zoning district.
- B-8 The City shall identify Samoa Boulevard, a State Highway, as a community entry way and seek funding to develop a specific public improvement program between the highway overpass and "K" Street that provides for consistent landscaping, street furniture, and directional signing.
- B-9 The City shall maintain the Boat Basin at its current design level of use.
- B-10 The City shall seek funding to establish interpretative sites along the Arcata Bay shore including a Nature Center and Wildlife Center to serve as an educational focal point for Arcata's natural resource areas.

Appendix C

TECHNICAL REPORT AND POLICY RECOMMENDATIONS

HOUSING

This Appendix is no longer required by the California Coastal Act of 1976 as ammended February 1986 as per Section 30500.1 which states: "No local coastal program shall be required to include housing policies and programs." This Appendix on Housing was deleted in January 1987.

Appendix D

TECHNICAL REPORT AND POLICY RECOMMENDATIONS

WATER AND MARINE RESOURCES

COASTAL ACT POLICIES (As amended February 1986)

30121. "Wetland" means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.
30230. Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.
30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained, and where feasible, restored through, among other means, minimizing adverse effects of wastewater discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.
30233. (a) The diking filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible, mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:
- (1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.
 - (2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
 - (3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for such boating facility, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.

- (4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities, and placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
 - (5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.
 - (6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
 - (7) Restoration purposes.
 - (8) Nature study, aquaculture, or similar resource-dependent activities.
- (b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable longshore current systems.
- (c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California" shall be limited to very minor incidental public facilities, restorative measures, nature study ...
- (d) Erosion control and flood control facilities constructed on water courses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal permit for such purposes are the placement, time of year of placement, and sensitivity of the placement area.

30236. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

- 30607.1 Where any dike and fill development is permitted in wetlands in conformity with this division, mitigation measures shall include, at a minimum, either acquisition of equivalent areas to tidal action; provided, however, that if no appropriate restoration site is available, an in-lieu fee sufficient to provide an area of equivalent productive value or surface areas shall be dedicated to an appropriate public agency, or such replacement site shall be purchased before the dike or fill development may proceed. Such mitigation measure shall not be required for temporary or short-term fill or diking: provided, that a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time.
30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.
- (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade such areas, and shall be compatible with the continuance of such habitat areas.

OBJECTIVES

Determine to what extent further development along or near creeks and related sensitive habitats along or near creeks and related sensitive habitats will aggravate siltation problems and the loss of riparian habitat.

Determine what type of maintenance program of the City's creeks and related sensitive habitats would cause the least disturbance to fish and wildlife values.

EXISTING CONDITIONS

Stream Channels

Jacoby Creek

Jacoby Creek is an important habitat for several fish species, including the commercially valuable silver salmon (Oncorhynchus kisutch) and steelhead trout (Salmo gairdneri), as well as cutthroat trout (S. clarki). The riparian vegetation provides habitat for numerous small mammals and birds. The section within Arcata's City Limits is not used for spawning by anadromous fishes, but serves as a route for access to the upstream spawning grounds. The streambed is in fair condition throughout the section, with unsedimented gravels, except in slow water areas where fine sediments are deposited. The immediate source of fine sediments is banks damaged by cattle. Caving, cracking, and sloughing of banks is common, particularly along the north bank. The area 350-400 meters upstream from Highway 101 is the most severely degraded by livestock. The remnant of a fish weir and fry trap that may aggravate bank erosion is also located in this area.

Fences and log debris jams pose problems for upstream fish migration. The most significant barriers within Arcata's City Limits are located upstream from Highway 101. Riparian vegetation is dense along most of the lower portions of the river and is dominated by willow, alder, and berry vines. The shading and cover provided by this vegetation is important to both aquatic and terrestrial organisms.

Jolly Giant Creek

The Jolly Giant Creek watershed covers approximately 1,000 acres. Its headwaters are located east of Humboldt State University in the Arcata Community Forest. As with the other "urban" streams in Arcata (Janes, Campbell, Grotzman, and Beith Creeks), it serves as storm drain collecting runoff and drainage principally from downtown Arcata west of Highway 101, and transporting it to the Bay.

Between Fifth and "H" Streets, and 11th and "N" Streets, the creek moves in and out of culverts, rarely remaining visible for more than 20 meters. The creek is visible at the following locations:

Between 6th and 7th Streets for approximately 20 meters;

At 9th and J Streets for 10 meters;

At 9th and K Streets for 15-20 meters;

At Seely and Titlow Warehouse on 10th Street for 10 meters.

The creek surfaces at 11th and N Streets where it parallels the railroad tracks for most of the remaining portion up to Highway 101 and is culverted once again under the highway. Culverts on Jolly Giant Creek are passable to anadromous fish under intermediate flow conditions, but prevent passage at low flows because of a lack of water, and possibly at high flows because of high water velocity.

Immediately downstream from Alliance Road, Jolly Giant Creek has been channeled and the banks are sparsely vegetated. The stream parallel to the Arcata High School field is quite narrow, well vegetated with rushes, grasses, and sedges. In both sections, there are some temporary obstructions caused by tires, boards, etc.

Jolly Giant Creek is a key element in the City of Arcata's anadromous salmonid restoration programs and serves as the homestream for returning salmon, steelhead trout, and cutthroat trout. A fish trap located at the undeveloped "Shay Park" site near Foster Avenue and Alliance Road serves to capture returning salmonids for rearing purposes and also marks the upper end of anadromous fish migration on this creek.

Several stream restoration and enhancement projects have been carried out on this creek by the City in order to improve drainage, reduce or streamline maintenance, and provide spawning and rearing habitat for various fish species. Many of the programs began as experiments by Humboldt State University faculty and students, and when successful,

were made a part of the creek's management. Spawning gravel and gravel retention structures have been placed on the creek immediately downstream of the trap entrance. Rearing habitat has been created by placing pool scouring structures in the creek between Alliance Road and 11th Street and at various locations along the recently restored portion of Butcher's Slough. Most importantly, rearing habitat has been improved by the creation of sediment traps at "H" Street, immediately upstream of Alliance Road, and immediately upstream of the fish trap. These sediment traps divert the majority of the bedload into the sediment trap where it settles out and can easily be removed without disturbing the remainder of the creek. The sediment trap immediately upstream of the fish trap has annually collected approximately 50 cubic yards of sediment, thus protecting the spawning habitat downstream.

The major restoration work on Jolly Giant Creek occurred during 1985-86 when the tidally influenced portion of the creek (Butcher's Slough) was lengthened and widened with funds from the California Coastal Conservancy. The City removed most of the remains of two abandoned lumber mills and returned the slough to a meandering, more natural course.

Janes Creek

The Janes Creek watershed covers approximately 5,000 acres and drains north Arcata, including the Aldergrove industrial area and also drains Arcata west of Jolly Giant Creek. A tidegate at McDaniel Slough, functioning as a flood control measure, prevents saline intrusion into lower Janes Creek. This gate also inhibits most upstream movement of fishes from the Bay into Janes Creek. The two fish species common to lower Janes Creek, are stickleback and cutthroat trout, although silver salmon have also been recorded. Several bird species and mammals, including river otter and rails, are to be found in this area.

The lower stream section prior to entering McDaniel Slough has a low gradient, meanders widely, and has a streambed composed of very fine sediments. Livestock are pastured in this area, but some riparian vegetation, mainly grasses, sedges, and rushes remain. The streamflow is sluggish and the channel is clogged in places with duckweed and Ranunculus.

The stream crosses under 11th Street about 1 kilometer from the mouth. Cattle access is unrestricted in this section. Pampas grass has been planted along one bank for a short distance near 11th Street. Human access is restricted by fences in this area, but the stream channel is in a semi-natural state. One hundred meters further upstream, the creek crosses under Haeger Avenue, then parallels Zehndner Avenue where it is channelized. The creek flows under a barn at Arcata Creamline Dairy where debris and organic material from livestock may be a problem. Banks in this area are eroded and vegetation is in poor condition.

Near Foster Avenue, about 1.4 kilometers from the mouth, dense willow and alder thickets clog the channel and trap debris. Near Heather Lane,

about 1.5 kilometers from the mouth, the creek is lined by berry vines and transplanted conifers up to Alliance Road. This vegetation restricts human access.

A debris dam in front of a concrete culvert at 1.7 kilometers may cause fish passage and flooding problems. Both the stream banks and channel are well vegetated in this area.

The banks of the stream crossing under Hilfiker Drive at 1.9 kilometers are excessively eroded because of livestock grazing and watering. Fine sediments line the creek channel, and anaerobic conditions prevail.

A fence at 2.2 kilometers just downstream from St. Louis Road crosses the channel and could become clogged with debris. At 2.5 kilometers, the creek goes under the railroad and Highway 101.

Campbell, Beith, and Grotzman Creeks

These creeks drain the southeastern portion of the City which includes the communities of Bayside and Sunnybrae. Campbell Creek also drains the residential and forested portion of the City that is north of Seventh Street and east of Highway 101. These creeks flow separately through the agricultural land between Old Arcata Road and Highway 101 until they meet immediately east of Highway 101 and collectively form Gannon Slough. Gannon Slough is controlled by a tidegate on the east side of Highway 101 then flows west under Highway 101 and into Arcata Bay. Electrofishing has indicated that the tidegate is not a complete barrier to anadromous fish migration as evidenced by the capture of juvenile silver salmon from Campbell Creek below Seventh Street.

All three creeks are completely channelized through the agricultural land and suffer from bank erosion and siltation due to uncontrolled cattle grazing. As part of the Community Park planning and permitting process, that portion of Campbell Creek that flows between Seventh Street and Samoa Boulevard (Highway 255) now has a restoration plan that would eliminate cattle grazing and add a sediment trap, small fishing pond, and spawning and rearing habitat primarily for coastal cutthroat trout. As a part of permit requirements, this stream restoration will be the first phase of Community Park development.

Sensitive Habitats

Humboldt Bay and its immediate environs provide important habitat for birds migrating along the Pacific Flyway as well as for resident species fish, birds, and other wildlife. The value of the Bay to wildlife is magnified by its proximity to agricultural marsh lands, as well as some riparian habitat along tributary streams and the nearness of the forested hillsides. Tidelands and marshlands are among the most limited habitat types since, except for freshwater marsh, they are found only in estuarine areas, and are subject to adverse influences from a wide range of land and water management practices.

Tidal Flats

Tidelands within Arcata City Limits were granted to the City by the California State Lands Commission in 1913, with additional tidal and submerged lands being granted in 1917. These tidelands, which are mostly mudflats, play an essential role in the food web of marine-associated organisms, producing vast numbers of invertebrates; alternating submersion and exposure distributes nutrients and creates an environment requiring specific adaptation for the resident organisms.

While all tideflats contribute significantly to local fish and bird populations, upper tidal mudflats in north Arcata Bay are even more heavily used by feeding shorebirds than other such areas (Furniss 1968, Gerstenberg 1972, May 1973). On these mudflats, effluent from Arcata's oxidation pond contributes nutrients to the food web. Gerstenberg (1972) found that upper tidal mudflats here were used by feeding shorebirds at three times the rate of moderate elevation flats and at nearly ten times the rate of lower tidal flats.

Arcata Bay contains numerous oyster, clam, and eelgrass beds, as well as a double-breasted cormorant rookery and Caspian tern nesting site, and two harbor seal hauling areas. Not all of these occur on City tidelands, however, all are part of the same complex estuarine environment and are subject to the same influences.

All of the North Arcata Bay tidelands are designated as wildlife conservation areas in the Arcata General Plan, Conservation Element. Eelgrass beds are included in the vegetation conservation map.

Marshlands

Marshlands bordering Humboldt Bay have been reduced by diking and filling, to about 10 percent of the original 6,500 acres of wetlands in the area, or about 600 acres of salt marsh and 85 acres of freshwater marsh. Freshwater marsh in the Arcata area occurs on the flats east of the Bay, the bottomlands between Arcata and the Mad River Slough, and adjacent to McDaniel Slough. While permanent freshwater marshes are small, they are swollen considerably by flooding of lowlands during the wet season. The freshwater marshes of the Arcata Marsh and Wildlife Sanctuary built by the City more than doubled the total for Humboldt Bay.

Most of the present agricultural lands in the Arcata Bottoms and East Bay Plain were originally salt marsh. The largest tract of salt marsh remaining within Arcata's City Limits is the 25 acres included in the National Wildlife Refuge between Brainard's Cut and the oxidation pond. Another 27 acres have been restored by the City on two other parcels: one along Butcher's Slough and the other immediately north of the oxidation pond. Most of the perimeter of Arcata Bay is salt marsh located on the Bay's north shore. The scattered marshes total approximately 127 acres.

These marshlands are highly productive. One acre of healthy wetland produces up to ten tons of nutrients per year, several times more food than an average wheat field (Odum 1961). Because this high productivity

is based on abundant nutrients supplied by stream flow through the marshes, and on the mixing effect of tidal action, marsh habitats are exceedingly sensitive to changes in water quality and quantity. Traffic across marshlands is a greater problem than for more natural terrestrial environments in that the fine marsh soils are highly susceptible to compaction, and the constant movement of water complicates the effects of disturbance to plant cover. Erosion and channeling may result from such disturbance.

Marshes bordering Arcata Bay provide habitat for several rare birds including the peregrine falcon and brown pelican.

Several rare and/or endemic plants also occur in these marshes. Orthocarpus castillyoides var. humboldtiensis is listed in the Inventory of Rare and Endangered Species (California Native Plant Society 1974) and is found in several areas bordering Arcata Bay. Grindelia stricta spp. Blakei is noted by Ferris (1960) to occur only in salt marshes bordering Humboldt Bay.

All of the salt marsh is included in the vegetation, wildlife, and hydrology conservation areas noted in the Conservation Element of the Arcata General Plan. Freshwater marshes in low-lying agricultural lands are included in wildlife and hydrology conservation areas, but not in the vegetation conservation areas.

Maintenance Program

Maintenance programs for Arcata's creeks, marshes, and tidelands are minimal. Dredging of creeks is the primary maintenance activity at present; the City routinely obtains a five-year permit to dredge Janes Creek above 11th Street, and to dredge all of Jolly Giant Creek. In actual practice, only certain stretches of Janes Creek within the urban areas are dredged. Debris is routinely removed from both creeks. Because of the inclusion of sediment traps along Jolly Giant Creek, dredging is far less frequent than in the past. However, annual removal of sediment from these traps has become routine maintenance. No routine dredging is done at present in Arcata Bay.

The three freshwater marshes of the Arcata Marsh and Wildlife Sanctuary are managed for water quality as well as for wildlife enhancement. These marshes receive treated wastewater as part of Arcata's wastewater treatment process and are, therefore, managed and maintained by treatment plant personnel.

The remaining wetlands and streams are managed and maintained by the City's Public Works Department with recommendations and input from the Marsh Task Force. The Task Force, originally formed in 1979 and then again reformed in 1983, is a citizen and agency advisory group charged with the planning of future wetland restoration projects and making wetland management recommendations to the City.

Land Use

Streams

North of 11th Street, Janes Creek flows through both County and City

areas. This portion is largely developed, and the current zoning and General Plan designations reflect that development. This area is predominantly low density residential; with one large agricultural area south of Foster Avenue and some industrial uses north of Foster Avenue.

South of 11th Street, Janes Creek flows through agricultural land to the Bay. With one exception, the General Plan designates this area Agriculture, with Parkland adjacent to the creek. One area north of Samoa Boulevard is designated Industrial on the General Plan and is zoned Light Industrial by the County.

Jolly Giant Creek flows entirely through the urban area of Arcata and, with the exception of the High School athletic field, and the Natural Resource and Public Facility Zoning along Butcher's Slough is bounded by high density residential and industrial zoning.

Jacoby Creek is zoned Agriculture Exclusive within Arcata City Limits and Agriculture for most of its length outside the City.

Gannon Slough west of Highway 101 is zoned Natural Resource Protection. East of Highway 101 Campbell, Beith and Grotzman Creeks are zoned Agriculture Exclusive up to Samoa Boulevard and Old Arcata Road. Beith and Grotzman also pass through Medium High Residential and General Commercial zonings before leaving the eastern coastal zone boundary. Campbell Creek between Samoa Boulevard (Highway 255) and 7th Street is zoned Public Facility (Park), along with the rest of the planned community park site.

Marshlands

Salt marsh within the City and on the perimeter of the Bay is zoned Natural Resource Protection as well as the entire Arcata Marsh and Wildlife Sanctuary. Along McDaniel Slough, the County zoning is Agriculture General while the Arcata General Plan indicates Parkland for the immediate vicinity of the Slough. Freshwater and saltwater marsh in the East Bay area and on the Arcata Bottoms are Agriculture Exclusive in both County and City zoning.

Tidelands

Tidelands within Arcata City Limits are zoned Natural Resource Protection.

EXISTING GENERAL PLAN POLICIES AND DESIGNATIONS

The existing Arcata General Plan policies and land use designations should seek to minimize additional siltation problems and forestall loss of riparian habitat. Existing policies indicate that:

Rivers, streams and adjacent areas, and marshes should remain in a natural condition;

Development along creeks should be subject to a setback requirement of at least 25 feet on either side of the creek center line.

All the large, undeveloped areas adjacent to the streams are designated as either Agriculture or Parkland on the existing General Plan Map. Consequently, no larger developments that could aggravate siltation problems or destroy riparian habitat are anticipated.

POLICY RECOMMENDATIONS

D-1 To protect riparian habitats and to minimize erosion, runoff, and interference with surface water flow, the City shall establish Riparian Buffer Areas along all streams within the Coastal Zone. The City shall add a new section, Riparian Buffer Areas, to Article 3 of the City's Land Use and Development Guide. This new section will formalize the City commitment to protection of riparian habitat by defining and identifying such habitat and by applying the following regulations within the buffer areas:

- (a) New developments and redevelopments shall maintain or restore a natural vegetation buffer strip along all designated streams. This buffer strip shall be subject to the following definitions:

Distinct Riparian Vegetation - 100 feet from the outer edge of the existing riparian corridor, all of Jacoby Creek. Existing riparian corridor shall include those areas adjacent to the creek that are presently dominated by trees and other vegetation characteristic of streamside habitat;

Channeled Creeks - 25 feet from the center line of the creek, all of Grotzman Creek, Lower Beith Creek, all of Campbell Creek, Jolly Giant Creek above Butcher Slough, and Janes Creek above McDaniel Slough;

Sloughs - 25 feet from the outer edge of the slough area, McDaniel Slough, Gannon Slough, and Butcher Slough.

- (b) Indigenous vegetation shall be retained in the buffer areas.
 - (c) Fencing that crosses a stream channel, acts as a barrier to anadromous fish, or acts as a collector for debris shall not be permitted.
 - (d) Where opportunities arise, the City shall require fencing along channels to prevent further bank erosion by livestock.
- D-2 The City shall seek funding to develop a comprehensive stream maintenance program for streams within its jurisdiction. This program shall provide for stream rehabilitation projects designed to improve flow capacity, minimize channel erosion, and enhance riparian habitat; annual channel inspection to identify and remove barriers to anadromous fish, debris dams, and obsolete flood control or scientific study facilities.

D-3 The City shall seek funding to provide for restoration of the following degraded resources:

- (a) Jolly Giant Creek from Butcher Slough north to Highway 101.
- (b) Janes Creek between 11th Street and Alliance Road.
- (c) Campbell Creek from Samoa Boulevard (Highway 255) to 7th Street in conjunction with Arcata Community Park development.
- (d) Beith and Grotzman Creeks east of Highway 101 and west of Old Arcata Road.
- (e) Campbell Creek from Samoa Boulevard (Hwy. 255) to Gannon Slough.
- (f) Gannon Slough.

D-4 The City shall seek assistance and ultimately develop a plan that identifies storm drain pollution sources; educates the public and businesses on the nature of waste treatment and its importance to Arcata's creeks and requires pre-treatment of waste by the identified pollution sources.

D-5 If land divisions are allowed creating new parcels mapped as wetlands on the adopted Coastal Wetlands Map, such divisions shall require the recordation of deed restrictions providing that no filling would be allowed on the wetland portion of the parcel in connection with new development other than that permitted under Section 30233 of the Coastal Act or the Coastal Wetlands Development Standards, and that the use of the newly created parcel would be limited to grazing or similar agricultural uses consistent with the Coastal Agricultural Exclusive zoning district.

D-6 The City shall adopt a Coastal Wetlands Map showing the location of wetlands, riparian corridors and uplands within the Coastal Zone. All development within the areas identified on the map as wetland or riparian corridor shall require a Coastal Wetlands Development Standards.

The City shall establish a Wetlands Buffer Area to protect the areas shown as wetlands on the Coastal Wetlands Map. All development within the buffer areas shall comply with the Wetlands Buffer Area Development Standards of the Coastal Land Use and Development Guide.

The City shall designate and zone all areas shown as wetlands or riparian corridor on the Coastal Wetlands Map as either Coastal Agriculture Exclusive, Coastal Natural Resource Protection, or Coastal Public Facility.

D-7 Development in the Heavy Industrial area bounded by Samoa Boulevard, Butcher's Slough and Gannon Slough should include local native plant landscaping, screening and other mitigations to ensure compatibility with the educational, recreational and wildlife uses of the Humboldt Bay National Wildlife Refuge and the Arcata Marsh and Wildlife Sanctuary.

APPENDIX E

TECHNICAL REPORT AND POLICY RECOMMENDATIONS

DIKING, DREDGING, FILLING, AND SHORELINE STRUCTURES

COASTAL ACT POLICIES (As ammended February 1986)

30233. (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:
- (1) New or expanded port, energy, and coastal dependent industrial facilities, inlcuding commercial fishing facilities.
 - (2) Maintaining existing or restoring previously dredged depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.
 - (3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetlands, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilties, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for such boating facility, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25% of the degraded wetland.
 - (4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.
 - (5) Incidental public service purposes, including, but not limited to, burying cables and pipes for inspection of piers and maintenance of existing intake and outfall lines.
 - (6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.
 - (7) Restoration purposes.
 - (8) Nature study, aquaculture, or similar resource-dependent activities.
- (b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable longshore current systems.
- (c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or

estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study

(d) Erosion control and flood control facilities constructed on water courses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal permit for such purposes are the placement, time of year of placement, and sensitivity of the placement area.

30235. Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

30607.1 Where any dike and fill development is permitted in wetlands in conformity with this division, mitigation measures shall include, at a minimum, either acquisition of equivalent areas of equal or greater biological productivity or opening up equivalent areas to tidal action; provided, however, that if no appropriate restoration site is available, an in-lieu fee sufficient to provide an area of equivalent productive value or surface areas shall be dedicated to an appropriate public agency, or such replacement site shall be dedicated to an appropriate public agency, or such replacement site shall be purchased before the dike or fill development may proceed. Such mitigation measure shall not be required for temporary or short-term fill or diking: provided, that a bond or other evidence of financial responsibility is provided to assure that restoration will be accomplished in the shortest feasible time.

OBJECTIVES

Determine what General Plan policies and regulations the City should establish in order to comply with the Coastal Act policies.

EXISTING CONDITIONS

Dikes

Much of the floodplain areas adjacent to Arcata Bay are at lower elevations than high tide water levels. Originally, salt marsh covered most of the Arcata Bottoms and East Bay plain. Progressive diking has allowed conversion of these lands to farming uses, however, seasonal flooding still occurs.

Levees have been built along the perimeter of the Bay and the lower reaches of Gannon Slough, Jacoby Creek, and McDaniel Slough. Reclamation District No. 768 constructed the perimeter dikes along McDaniel Slough in the early 1900s. This district is still in existence and is responsible for maintenance of the dikes. Levees along Gannon Slough and Jacoby Creek are not maintained and are in poor condition. The most effective barriers to flooding are the Eureka Southern Railway grade and U.S. Highway 101 south of Arcata. In 1960, a dike was constructed on the mudflats south of town to enclose a landfill dump which was then closed in 1974. This dike now surrounds the Franklin R. Klopp Recreational Lake portion of the Arcata Marsh and Wildlife Sanctuary.

Dredging and Filling

A sizeable portion of south Arcata's residential and industrial lands are built on filled wetlands. Lots along South "G" Street, Samoa Boulevard, and Bayside Road, and sites such as the City Corporation yard and the upland portions of the Arcata Marsh and Wildlife Sanctuary have received varying amounts of fill, as is evident from the low wet nature of adjacent lands.

The City routinely applies for a Corps of Engineers permit for maintenance dredging of Janes Creek above 11th Street and all of Jolly Giant Creek. In practice, most dredging occurs in the urban sections of Janes Creek. Approximately \$15,000 a year is spent by the City on Creek dredging operations.

Large scale dredging occurred in conjunction with construction of Arcata's boat launching facility in 1971. A 5,000 foot channel was dredged to a depth of minus 4 feet below mean lower-low water. The channel has not been dredged since that time and has silted up to an elevation of approximately 0 feet mean lower low water.

The landfill dump was used by the County until problems occurred with high leachate levels in nearby Butcher's Slough. In 1974, the dump was sealed with three feet of impervious bay mud dredged from the tideflat previously enclosed by the dike. This left a relatively barren raised area and a 17-acre basin of sterile blue clay sediment. The basin and the landfill are now restored to integral parts of the Arcata Marsh and Wildlife Sanctuary.

The most extensive future dredging and filling activities will be associated with the proposed restoration of 438 acres of land west of

McDaniel's Slough in conjunction with a county-sponsored wetland mitigation bank program. Other minor dredging includes periodic removal of silt from the boat ramp and channel immediately west of the ramp.

A proposal to expand the Janes Creek Maintenance District for purposes of flood control has been discussed by agencies involved in the District. Expansion plans include the following proposed projects:

- Excavation of a channel from the southwest side of the Greenview Area Subdivision, west to Liscomb Slough.
- Some channeling and removal of silt and aquatic growth in Janes Creek/McDaniel Slough, Jolly Giant Creek, Grotzman Creek, and Beith Creek.

This proposal has not been adopted by any of the agencies involved in the District.

Shoreline Structures

The only existing shoreline structures other than dikes within the Coastal Zone are tide gates and the Arcata boat launching ramp. Tide gates are located at the mouth of McDaniel Slough, and on Gannon Slough. The boat launching facility was constructed in 1971 and includes a ramp and parking area.

Proposed shoreline structures are included in the expansion of Janes Creek Maintenance District. The maintenance district expansion plans call for replacing the wooden tidegates on McDaniel Slough with 100-foot wide concrete gates. The purpose of this project is to allow a greater volume of water to escape at low tide during and immediately after a storm. The proposed wetland mitigation bank deals with the flooding problem by moving or removing the tidegates. Both proposals have not been adopted by any agency.

Another structure planned is a fish ladder at the Klopp Lake outlet to allow migrating coastal cutthroat trout that were spawned or planted in the lake access to and from the Bay. A fish ladder is also proposed for the treatment plant discharge in Butcher's Slough that would allow migrating salmon and steelhead reared in wastewater to return to the hatchery.

An interpretive center that would serve as an educational focal point for all to the natural resources of Arcata Bay and possibly include a wildlife care center is presently in the planning stages. The most likely location of this proposed center is a parcel north of the treatment plant on the west side of South "G" Street.

POLICY RECOMMENDATIONS

- E-1 Diking, filling, or dredging of Bay waters, wetlands, and estuaries shall be permitted, where feasible mitigation measures have been provided to minimize adverse environmental effects, for the following limited uses:
- (a) For incidental public service purposes, including, but not limited to, burying cables and pipes, and maintenance of existing dikes and public facilities.
 - (b) To maintain a channel adequate to serve the boat ramp at current levels of use.
 - (c) Resource restoration purposes.
 - (d) Nature study, aquaculture, or similar resource dependent activities.
 - (e) Agriculture within existing wetlands, but not including the expansion thereof.
- E-2 The City shall permit shoreline structures (such as dikes or tidegates) that may alter the natural shoreline only to protect existing development, only when no other feasible less environmentally damaging alternative is available, and only when not located within a wetland, unless the wetland will be the primary beneficiary of the structure.
- E-3 The City shall not permit disposal of dredge spoils on existing wetlands unless such disposal is necessary for the resource restoration project. Fill will be allowed for aquaculture projects if it can be shown that it is necessary for the project and is required to be located within the wetland and there is no other feasible less environmentally damaging alternative.
- E-4 The City shall require a Use Permit and/or Nature Area Permit for any activity or development proposed in the Natural Resources Protection Zone.
- E-5 The City shall adopt a Coastal Wetlands Map showing the location of wetlands, riparian corridors and uplands within the Coastal Zone. All development within the areas identified on the map as wetland or riparian corridor shall require compliance with the Coastal Wetlands Development Standards of the Coastal Land Use and Development Guide.
- E-6 Where wetlands are seasonally farmed, continued agricultural use of the wetlands is allowed. Expanding farming operations into non-farmed wetlands by diking or otherwise altering the functional capacity of the wetland is not permitted. Farm-related structures (including barns, sheds, and farm-owner occupied housing) necessary for the continuance of the existing operation of the farmed wetlands may be located on an existing farmed wetland parcel, only if no alternative upland location is viable for such purpose and the structures are sited and designed to

minimize the adverse environmental effects on the farmed wetland. Clustering and other construction techniques to minimize both the land area covered by such structures and the amount of fill necessary to protect such structures will be required. The location of the wetlands shall be determined by use of the adopted Coastal Wetlands Map.

- E-7 The City shall establish a Wetlands Buffer Area to protect the areas shown as wetlands on the Coastal Wetlands Map. All development within the buffer areas shall comply with the Wetlands Buffer Area Development Standards of the Coastal Land Use and Development Guide.

The City shall designate and zone all areas shown as wetlands or riparian corridor on the Coastal Wetlands Map as either Coastal Agriculture Exclusive, Coastal Natural Resource Protection, or Coastal Public Facility.

Appendix F

TECHNICAL REPORT AND POLICY RECOMMENDATIONS
COMMERCIAL FISHING AND RECREATIONAL BOATING

COASTAL ACT POLICIES (As amended February 1986)

30224. Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities in natural harbors, new protected water areas, and in areas dredged from dry land.
30234. Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.
30255. Coastal-dependent developments shall have priority over other developments on or near the shoreline. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal-related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.

OBJECTIVE

Determine what policies are needed to encourage and protect aquaculture in the Bay.

EXISTING CONDITIONS

The importance of commercial and sport fisheries to Humboldt County has been documented through numerous biological, economic, and recreation reports on the area. A recent survey, "An Economic Development Action Plan and Strategy for Humboldt County," by QRC Research Corporation, 1978, emphasized that the sport and commercial fish industries, including shellfish, were second only to the timber industry in economic value in Humboldt County. In 1979 the commercial industry currently circulated an estimated \$35 million annually in the Humboldt Bay area; sport fishing, based only on salmon and steelhead caught, may be an additional \$5-10 million per year.

In general, it is believed that the commercial and sport industries are not yet fully developed, that opportunity exists for expansion in a number of ways. These include simply increasing existing finfish landings and enhancing the existing oyster industry, as well as creation of new industries, such as developing a market for Hake, or establishing a fish by-products processing plant.

Many recommendations for expansion have involved enlisting some new, innovative aquaculture programs, all of which are centered in Humboldt Bay. Among these is the culture of oysters for sale on the half-shell, mussel farming, crab farming, nori (seaweed) culture, and ocean ranching of

anadromous fishes. The specific aquaculture projects in North Bay are the current oyster industry in which Pacific oysters are grown and harvested on mudflats in central North Bay, and in the Mad River Slough.

Shellfish Growing

North Humboldt Bay is one of the areas of oyster production in California. Currently, the harvest and sale of oysters from Humboldt Bay generates over \$1,000,000 annually. The industry has been in Humboldt County for 30 years and offers the equivalent of direct, full-time employment for 40 persons. Giant Pacific Oysters are the main product grown in north Humboldt Bay and Mad River Slough although interest in reviving native oyster culture is increasing. Expansion could involve a need for additional growing areas, such as Arcata's tidelands, as well as new grading and distribution facilities.

Oyster farming in Humboldt Bay has been the center of considerable controversy in recent years. This controversy has focused on coliform loading of Humboldt Bay during and after periods of heavy rainfall. Past sources of the coliform loading have been identified as runoff from pastures, increased contaminated discharges or spills from sewage treatment plants disposing into the Bay, septic tank leachate, and some urban runoff. The largest contributor was the runoff from pastures, a non-point source of pollution for which there was little chance of control. However, the sources of most concern, in the past and those for which the transmission of disease is possible, were the discharge of unchlorinated sewage into Humboldt Bay, most notably from the sewage treatment plants in Eureka, (FDA 1978), and septic tank leachate. However, as of 1986, all wastewater treatment plants discharging into Humboldt Bay have been renovated, upgraded, replaced or eliminated to the point that unchlorinated sewage effluent "spills" into the bay have been virtually eliminated. In addition many communities around the bay previously on septic tanks have now been sewered thereby reducing a portion of the non point coliform loading to the Bay. Non-point sources, while still the biggest contributor of coliform to the Bay, have been further reduced by a number of stream restoration and enhancement projects that have reduced erosion, siltation and in some cases, excluded cattle from a number of stream sections.

The shellfish industry is regulated by both the California Department of Health and the U.S. Food and Drug Administration. At this time, regulations require that no oysters be harvested from water having a total coliform count of 70MPN/100ml or greater, and that the fecal coliform count for oysters harvested shall not exceed 230MPN/100ml. These conditions are met most of the time in Humboldt Bay except following periods of intense (0.5" per 24 hrs.) rainfall. For this reason, commercial harvesting of shellfish in Humboldt Bay is prohibited for five days following each major winter storm. The improvements in treating point and non point sources of coliforms has led to the planning of a new study of coliform levels in the bay. This study will most likely be carried out during the winter of 1986/87 and will probably not relieve the oyster industry of some type of closure but may reduce the length of the closure, thereby allowing longer harvest periods.

Salmon Fishery Restoration Program

The City of Arcata has supported research in salmon fishery restoration for

about 17 years. This program, directed by Dr. George Allen of Humboldt State University, has involved the construction of salmon rearing ponds adjacent to the City's sewage treatment plant oxidation pond, and the subsequent raising of juvenile salmon to smolt stage in a mixture of wastewater and Bay water. Overall returns have been as good or better than those in local state hatcheries and the county hatchery.

The main goal of the program has been to restore self sustaining runs of salmon (silver and king), steelhead trout and cutthroat trout to Humboldt Bay tributaries. Various other freshwater species of fish and invertebrates are currently being studied for their commercial aquaculture importance. These include native oysters, Sacramento Blackfish and softshell clams. The facility could, providing that environmental and political concerns were satisfied, someday expand into a commercial salmon ranching facility. This salmon ranch is not envisioned as a full-scale capital and labor intensive industry, but rather as a small testing facility which could engage in the commercial sale of the excess salmon that were not needed to meet the primary goal of stream and fishery restoration.

The potential impacts of a this type of salmon ranching project are discussed in detail in the Arcata Wastewater Pilot Project Environmental Impact Report. Those which can be significant include genetic dilution of native stocks in Jacoby Creek, transmission of disease to healthy populations, and overloading the carrying capacity of Humboldt Bay.

Presently, the City's aquaculture program provides salmon that are caught in the local commercial fishery. The program also provides trout that are stocked in the Arcata Marsh and Wildlife Sanctuary's fishing lake (Klopp Lake). It has been suggested that Arcata's aquaculture program contributes to the health of the local piscivorous (fish-eating) bird populations, such as cormorants, pelicans and herons, and helps to attract them to the Sanctuary area. Birdwatchers from all over the United States come to Arcata because of the diversity of bird species in this area, and in so doing contribute to the region's tourist economy.

POLICY RECOMMENDATIONS

F-1 To protect aquaculture in Arcata Bay, the City shall:

- (a) Ensure that its wastewater discharge does not aggravate existing coliform loading problems in Arcata Bay;
- (b) As part of the stream maintenance program take measures to reduce coliform loading of perennial streams within its jurisdiction. These measures shall include controlling identified sources of coliform loading such as septic tank leachate and run-off from agricultural operations.

F-2 To encourage additional aquaculture in Humboldt Bay, the City shall continue the development of:

- (a) The integrated wetland enhancement, wastewater treatment and salmon ranching program.
- (b) The tidelands for commercial and sports oyster production.

Appendix G

TECHNICAL REPORT AND POLICY RECOMMENDATIONS

AGRICULTURE

COASTAL ACT POLICIES (As amended February 1986)

30241. The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the area's agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:

- (a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.
- (b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses and where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.
- (c) By permitting the conversion of agriculture land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.
- (d) By developing available lands not suited for agriculture prior to the conversion of agriculture lands.
- (e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased costs or degraded air and water quality.
- (f) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b) of this section, and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.

30241.5 (a) If the viability of existing agricultural uses is an issue pursuant to subdivision (b) of Section 30241 as to any local coastal program or amendment to any certified local coastal program submitted for review and approval under this division, the determination of "viability" shall include, but not be limited to, consideration of an economic feasibility evaluation containing at least both of the following elements:

- (1) An analysis of the gross revenue from the agricultural products grown in the area for five years immediately preceding the date of the filing of a proposed local coastal program or an amendment to any local coastal program.
- (2) An analysis of the operational expenses, excluding the cost of land, associated with the production of the agricultural products grown in the area for the five years immediately preceding the date of the filing of a proposed local coastal program or amendment to any local coastal program.

For purposes of this subdivision, "area" means a geographic area of sufficient size to provide an accurate evaluation of the economic feasibility of agricultural uses for those lands included in the local coastal program or in the proposed amendment to a certified local coastal program.

- (b) The economic feasibility evaluation required by subdivision (a) shall be submitted to the commission, by local government, as part of its submittal of a local coastal program or an amendment to any local coastal program. If the local government determines that it does not have the staff with the necessary expertise to conduct the economic feasibility evaluation, the evaluation may be conducted under agreement with the local government by a consultant selected jointly by local government and the executive director of the commission.

30242. All other lands suitable for agricultural use shall not be converted to non-agricultural uses unless (1) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.

OBJECTIVES

Determine what minimum lot size and policies are needed to preserve agricultural lands as defined in the Coastal Act.

Determine when recreational use of agricultural land is consistent with Coastal Act policies.

EXISTING CONDITIONS

Definitions

In the Open Space Element of the Arcata General Plan, a definition of agricultural land is quoted from the California State Supplement to Laws Relating to Conservation and Planning:

"Agricultural land - land actively used for the purpose of producing an agricultural commodity for commercial purposes. Land may be considered to be actively used notwithstanding the fact that in the course of good agricultural practice it is permitted to lie idle for a period of up to one year."

According to the California Coastal Plan Manual "Prime Agricultural Land" (per California Government Code Section 51201 (c)) means:

1. All land which qualifies for rating as Class I or Class II in the Soil Conservation Service land use capability classifications;
2. Land which qualifies for rating 80 through 100 in the Storie Index Rating;

3. Land which supports livestock used for the production of food and fiber and which has an annual capacity equivalent to at least one animal unit per acre as defined by the U.S. Department of Agriculture;
4. Land planted with fruit or nut bearing trees, vines, bushes, or crops which have a non-bearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than \$200 per acre;
5. Land which has returned from the production of unprocessed agricultural plant products on an annual gross value of not less than \$200 per acre for three of the five previous years.

"Non-prime agricultural land" means other coastal agricultural lands that are now in use for crops or grazing, or that are suitable for agriculture.

Land Use

At various times during the past 100 years, agricultural land in the Arcata area has produced raspberries, strawberries, lilies, daffodils, potatoes, corn, artichokes, hay, forage for cattle, plus a number of shallow-rooted cool weather vegetables. In recent years, a narrowing of the agricultural base has occurred; at present, the two major uses of Arcata's agricultural land are the production of daffodils and lily bulbs, and the raising of dairy and beef cattle. Within the Arcata planning area about 4,300 acres are in dry farm pasture, 3,180 acres are in irrigated pasture, between 200 and 300 acres are in intensive crops, and 10 acres are irrigated idle crop land (adjusted from the California Department of Water Resources Survey, 1968).

There are 800 acres of agricultural land lying within Arcata City Limits and the Coastal Zone. All of this is zoned Agricultural Exclusive, with a minimum parcel size of 20 acres, except for the area west of Greenview Subdivision which is zoned Residential-Agricultural. All of this land is rated "prime agricultural" according to one or more of the parameters listed on the previous page. Roughly 3/4 of Arcata's agricultural land occupies the East Bay Plain, while the remainder lies to the south and west of the City in the Arcata Bottoms.

Arcata Bottoms

This 7,000 acre alluvial plain lying between the Mad River and Humboldt Bay is one of the three major agricultural production areas in northern Humboldt County. The highest quality soils, rated 60 or better on the Storie Index, lie directly to the north and west of the Arcata urban area. Here the soil is lighter and drainage is better than at locations nearer the Bay. In the Conservation Element of the Arcata General Plan, soil Grades I and II are designated highly suitable for agriculture. The planning area contains some of the largest areas of Grades I and II soils in northern Humboldt County.

Dense soils south of Samoa Boulevard provide grazing for beef cattle. Between Samoa Boulevard and Lanphere Road dairy herds are supported at a rate

of 2 acres per cow; north of Lanphere Road to the Mad River 1 1/2 to 1 3/4 acres are required per animal (University of California Agricultural Extension 1979).

At one time, dairy farmers used the less productive land adjacent to Humboldt Bay as well as land farther inland; however, as overhead expenses have increased, this land has proven too marginal to be profitable. Dairies have retreated to higher ground, leaving the low-lying areas to beef herds which can be maintained on poor quality and smaller amounts of feed.

Dairying is a growing industry in the area for a number of reasons. The land and climate are well suited to production of grasses and clover; green feed is available in the fields year-round, whereas in many other California dairy areas, the fields dry up in summer months. A well-developed marketing system exists for dairy products, both for local sales and exports. Of the 1,587,000 hundred weights of milk production in Humboldt County in 1977, 15 to 17 percent came from dairies in the Arcata Bottoms (University of California Agricultural Extension 1979).

It is estimated by the University of California Agricultural Extension Service that approximately 60 cows are required to support a family on \$16,000 to \$18,000 per year (1980 dollars). In the Arcata Bottoms, this size herd can be kept on 90 to 160 acres depending on location and land management practices.

Urban encroachment onto agricultural land west of Arcata has displaced dairy farms in several locations. The 50 to 60 acre area west of Greenview Subdivision is part of a Grade A dairy farm owned by Windy Acres Co.; this parcel is zoned Residential/Agricultural, with a minimum lot size of 2 1/2 acres. Originally, the subdivision area was part of this dairy. The remaining land is seeded in grasses, clover, or silage corn and irrigated with well water. One dairy cow can be supported here on 1 3/4 acres.

Sun Valley Bulb Farms occupies 209 acres, of which only 65 acres lie within the Arcata City Limits and within the Coastal Zone, on land zoned Agricultural Exclusive. To combat pests and maintain productivity, it is necessary to rotate crops and allow land to lie fallow, which increases the amount of acreage needed in a bulb farm operation. According to a representative of Sun Valley, 100 acres is the minimum feasible size for a commercial bulb farm in the Arcata area.

Agricultural land south of Samoa Boulevard and west of "I" Street is zoned Agricultural Exclusive and is presently used for grazing beef cattle. The drainage at this location is better than areas to the west along the Bay's perimeter, and is comparable in quality to the grazing lands adjacent to Bayside Road.

Open space between South "G" Street and Highway 101, zoned Agricultural Exclusive, is leased by the Ford family from Brizards. This land supports beef cattle at a rate of one animal per 1 3/4 to 2 acres.

Unincorporated interest areas in west Arcata include some agricultural land. The section north of Samoa Boulevard, between "V" Street and the railroad tracks contains industrial sites as well as two agricultural parcels. The area west of Janes Road and north of Greenview Subdivision slices through

three agricultural parcels. All of these are suitable for the maintenance of dairy animals at roughly two acres per cow, or for beef herds at 1 1/2 acres per animal.

East Bay Plain

This area is zoned Agricultural Exclusive and is used primarily for the grazing of beef cattle. Most of the low-lying land is reclaimed marsh, and while the soil is high in organic content, it is characterized by poor drainage, salt in the subsoil, and high compaction potential. The land is mostly Grade II and III on the Storie Index, and is highly flood prone. Under good management this land will support a beef cow on 2 to 2 1/2 acres; though it is not as high quality as lands in the Arcata bottoms, it is still considered prime in that it can produce over \$200 an acre in hay, with greatest yields occurring on the higher lands along Old Arcata Road (University of California Agricultural Extension 1979). These lands are all seasonal in use, with stock being moved to other areas during wet periods.

Unincorporated interest areas along the Old Arcata Road are primarily residential, with one large agricultural holding north of Jacoby Creek. This is the only land on the East Bay Plain rated above 80 on the Storie Index.

Agricultural Parcel Sites

With few exceptions, agricultural lands within the City Limits and the Coastal Zone are in holdings larger than 60 acres. The East Bay Tidal Plain is divided among four ownerships, and the land west of Greenview Acres comprises two parcels totaling 50 acres under the ownership of a dairy farm. Areas that have been converted to smaller parcels are located north of Greenview Acres and west of Janes Road, and north of Samoa Boulevard along McDaniel Slough and Old Arcata Road.

Recreation

Hunting and Wildlife Observation

Much of Arcata's agricultural land is also superior bird habitat, particularly those areas in the East Bay flood plain and lands which border the Bay and its tributary streams. Arcata Bay and environs are widely acclaimed as prime territory for both hunters and bird watchers. These consumptive and non-consumptive recreational activities are concentrated along the Bay margin, at Mad River Slough, however, Gannon Slough, Jacoby Creek, and many low, wet areas throughout the Arcata Bottoms and the East Bay area provide nesting, feeding, and resting territory for myriads of bird species.

Much of the land containing the above habitats is agricultural. At present, access is limited to certain areas along the Bay shore (see Access section). According to Coastal Act policies, recreational development generally does not have priority over agricultural uses.

30222. The use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public

opportunities for coastal recreation shall have priority over residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry.

Also included under "Recreation and Visitor Serving Facilities" are the following policies:

30220. Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

30223. Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.

Observation and hunting of coastal wildlife cannot be pursued at inland water areas. Many coastal bird species do not occur in upland areas. According to the policies stated above, recreational hunting and observation, as well as agriculture are important land uses in the Coastal Zone.

Policies intended to preserve agricultural lands stress that land "shall be maintained in agricultural production" and that "lands suitable for agricultural use shall not be converted to non-agricultural uses." The recreational activities of hunting and nature study do not require conversion of agricultural lands as they are managed in the Arcata area. In this light, recreational uses that do not require permanent structures are compatible with agriculture in the Coastal Zone.

Other Recreational Activities

Local Little League baseball groups have obtained a Coastal Zone permit to develop playing fields in the East Bay Plain just south of Samoa Boulevard.

Coastal policies may allow the conversion of agricultural land where: the proposed facility or activity is necessary and is consistent with other Coastal policies; there is no alternative location that would meet the same need with less environmental damage; and such facilities are sited and designed to minimize adverse impacts on the agricultural resource. The keys to permitting the conversion of non-prime agricultural land to recreational use may lie in determining if the conversion is irrevocable, and if the conversion does not interfere with adjacent agricultural uses.

Coastal Conservancy Projects

The Coastal Conservancy can assist in the preservation of agricultural lands by:

The selective acquisition of prime agricultural lands proposed for conversion to non-agricultural use to prevent urban intrusions into agricultural areas, to protect lands not now in agricultural production but needed to meet long-term food needs, and to assemble lands into parcels of economic size.

There are currently no agricultural areas in Arcata's Coastal Zone that would qualify for Coastal Conservancy protection.

POLICY RECOMMENDATIONS

- G-1 The City shall apply Coastal Agricultural Exclusive zoning to all areas designated for agriculture on the Local Coastal Plan Map.
- G-2 The minimum lot size in the Coastal Agricultural Exclusive zone shall be increased to 60 acres.
- G-3 The Coastal Agricultural Exclusive zone shall include the following:
- (a) The "Permitted Uses" section shall include: "Agricultural Structures - includes greenhouses or other nursery structures erected over exposed soil."
 - (b) The "Conditionally Permitted Uses" section shall include: "Greenhouses or other nursery structures erected on concrete perimeter foundations may be permitted if no less environmentally damaging alternate is available."
 - (c) Commercial greenhouses will not be allowed to locate within a wetland.
- G-4 Where wetlands are seasonally farmed, continued agricultural use of the wetlands is allowed. Expanding farming operations into non-farmed wetlands by diking or otherwise altering the functional capacity of the wetland is not permitted. Farm-related structures (including barns, sheds, and farm-owner occupied housing) necessary for the continuance of the existing operation of the farmed wetlands may be located on an existing farmed wetland parcel, only if no alternative upland location is viable for such purpose and the structures are sited and designed to minimize the adverse environmental effects on the farmed wetland. Clustering and other construction techniques to minimize both the land area covered by such structures and the amount of fill necessary to protect such structures will be required. The location of the wetlands shall be determined by use of the adopted Coastal Wetlands Map.
- G-5 Private and public non-vehicular recreational activities such as hiking, riding, fishing, hunting, and other recreational activities which do not require premanent structures, facilities, or foundations may be permitted in the Agricultural Exclusive zone if they do not interfere with adjacent agricultural uses or limit potential of the site to return to agricultural use or significantly displace the wildlife utilizing the area, especially in seasonal wetlands. This recommendation shall be implemented in the Coastal Land Use and Development Guide.

Appendix H
TECHNICAL REPORT AND POLICY RECOMMENDATIONS
HAZARD AREAS

COASTAL ACT POLICIES

30253. New Development shall:

1. Minimize risks to life and property in areas of high geologic, flood, and fire hazard.
2. Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

OBJECTIVES

Determine if the policies and standards in the Seismic Safety and Public Safety Elements are sufficient to ensure appropriate development in the Coastal Zone.

Determine what mitigation actions are needed to protect existing businesses in the flood prone lands around South "G" Street.

EXISTING CONDITIONS

The City of Arcata has adopted Seismic Safety and Public Safety Elements of its General Plan. These elements, adopted in December of 1975, included an analysis of the Arcata Coastal Zone. Because of significant new developments in the understanding of local geology, including mapping by the state of a "Special Studies Zone" where surface fault rupture is suspected, the City is preparing a new Seismic Safety Element. The following is a summary of relevant data from the adopted elements and the new draft. The Uniform Building Code and the State of California construction code requirements implement portions of the Seismic Safety Element of the General Plan.

Geologic Hazards

The Arcata Coastal Zone is located in a seismically active area. The effects of earthquakes on a number of regional faults will be felt in the Coastal Zone. The primary source of local earthquakes is expected to be the Mad River Fault Zone including the Trinidad, McKinleyville, Mad River and Fickle Hill faults. In the Arcata Coastal Zone, the effect of earthquake ground shaking from the Mad River Fault Zone faults is expected to be as great or greater than the effect of earthquakes from more distant faults, including the San Andreas, Mendocino, and Deep Seismic Fault Zones and the Little River Fault.

Current theory leads geologist to believe that the maximum credible earthquake in the Mad River Fault Zone is between 7.7 and 8.3 on the Richter Scale. Expected peak acceleration values range from 0.74 g and 0.95 g, with repeatable accelerations ranging from 0.48 g and 0.62 g. (1.0 g is equal to the force of gravity). The entire Coastal Zone in Arcata is subject to high groundshaking, and buildings should be designed to withstand the expected earthquake accelerations.

Liquefaction is a major seismic hazard in the Arcata area. The flatlands to the west and south of town are underlain by alluvial deposits and former bay muds, and are classified as having a high liquefaction potential. Soil borings are required as a part of any project environmental impact report in this area, and special engineering consideration is required to compensate for any liquefaction potential found. The Arcata General Plan states that critical facilities should not be located in an area of high liquefaction potential. The entire Coastal zone in Arcata is an area of potentially high liquefaction. To date, no deep soil borings have discovered the existence of liquefaction potential which would require special design.

The following public and private critical facilities in the Coastal Zone are presently located in an area of high liquefaction potential.

- A. The City of Arcata's Corporation Yard and Sewage Disposal Facility.
- B. California Highway Patrol Office.
- C. U.S. Highway 101 and the Samoa Boulevard overpass.
- D. Bloomfield School, Jacoby Creek School, St. Mary's School, and Equinox School.
- E. Humboldt Bay Municipal Water District water main.
- F. Radio Station KATA.

Surface fault rupture is another major potential geologic hazard in the Arcata Coastal Zone. A portion of the area in the Coastal Zone has been identified by the state Division of Mines and Geology as being in an Alquist-Priolo Act "Special Studies Zone" because of suspected high potential for surface fault rupture. This area is in the vicinity of the intersections of Seventh and Union Streets and Bayside Road. The area extends approximately 700 feet west, 500 feet south and 1600 feet east of this intersection. Development in this area will require a special geologic study as required by the Alquist-Priolo Act and City ordinance.

The potential for tsunamis, landsliding, and erosion is very low within the Coastal Zone. There are no bluffs or cliffs located in this portion of the Coastal Zone.

Flood Hazard

Flooding is a major hazard over most of the Coastal Zone in Arcata. Nearly all of the agricultural land and some of the industrial and residential land in the zone is within the 100 year flood plain.

The southern portion of the area in the "Q" Street to Buttermilk Lane section of the Coastal Zone is subject to flooding. The City changed the zoning on a 100-acre parcel west of U.S. Highway 101 from industrial to agricultural because of flooding and other environmental problems. The remaining problem area is along South "G" Street. A number of small industrial firms have developed along South "G" Street and have flooded several times in the past. A substantial portion of the vacant parcel between U.S. Highway 101 and Union

Street is in the 100-year flood plain; however, this appears to be primarily a solvable drainage problem.

The City's response to flooding problems has been to minimize development in the flood zone through its land use planning and to regulate construction methods to minimize damage from flooding. The amount of vacant land designated for urban development in the flood plain is minimal. A Natural Hazards Combining Zone has been applied on all lands subject to inundation by the anticipated 100 year flood as shown on the Flood Insurance Rate Maps dated May 2, 1983 that were prepared by the Federal Emergency Management Agency. This zone requires that the ground floor level of all buildings, building enlargements, or building extensions must be at least one foot above the level of the 100-year flood plain. All construction methods and practices must be designed to minimize flood damage.

Fire Hazard

Fire hazard classifications in the Coastal Zone range from No Natural Fire Hazard to Low Natural Fire Hazard. These classifications do not represent significant potential hazards.

POLICY RECOMENDATIONS

H-1 Land Use Designations. Since a significant portion of the developed area of the City of Arcata lies within the high liquefaction potential zone, alteration of the existing land use patterns in the City would not be physically nor economically possible. Present General Plan Land Use Designations and Policies are adequate to insure proper development in the Coastal Zone and need not be altered for Hazard purposes.

H-2 The City shall regulate land use in areas of significant natural hazards in the following manner:

- (a) New Critical Facilities - No new critical facilities shall be permitted to locate in areas of potential liquefaction or within the 100-year flood plain (See Table 1 for a list of critical facilities).
- (b) Existing Critical Facilities - Existing critical facilities located in areas of potential liquefaction shall not be permitted to expand beyond a cost of \$50,000 (as of December 1980) with allowances for inflation without requiring a detailed site investigation which addresses the potential for liquefaction and settlement, and develops adequate mitigations satisfactory to the City and to a registered geologist, a professional civil engineer, or a certified engineering geologist who supervises the study. Replacement of existing facilities or structures will not require further site investigation as outlined above. Existing critical facilities located in the 100-year flood plain shall be permitted to expand only if adequate flood control measures are provided and if the expansion cannot be provided for elsewhere due to the nature of the facility.

- (c) Non-Critical Facilities - Non-critical facilities shall be permitted to locate or expand in areas of potential liquefaction. Non-critical facilities shall be permitted to locate or expand in the 100-year flood plain only if flood proofing measures which meet flood insurance criteria and which are satisfactory to the City are provided, and if it can be shown that such development would not cause additional flooding and/or drainage problems in other areas.

TABLE 1. CRITICAL FACILITIES

Critical facilities include: power plants, large dams, civil defense headquarters, major electrical facilities, power and communication substations, hospitals, schools, fire stations, police stations, radio stations, television stations, microwave stations, major public buildings, sewage treatment plants, and water works.

- H-3 For non-critical facilities the City may require site-by-site soils and geologic engineering studies when the Director of Community Development determines that public health and safety could be affected. These studies shall be done by a registered geologist, a registered civil engineer with expertise in soils, or a certified engineering geologist in areas of potential liquefaction and settlement. Potential hazards shall be evaluated using the ground shaking parameters presented in the Seismic Safety Element. The study should show that the proposed project minimizes the potential hazard to life and health.
- H-4 To protect structures and critical facilities in the Coastal Zone, and to provide protection of existing habitat values, the City shall encourage and promote flood protection practices which manage flooding problems on a watershed basis.
- (a) The City shall encourage the expansion of Janes Creek Flood Control District to include the watersheds of Janes, Jolly Giant, Grotzman, and Beith Creeks, or shall otherwise coordinate with the County to alleviate existing flooding problems.
- (b) The newly formed district or designated agency shall evaluate alternate flood control measures and select a flood control plan that improves drainage and minimizes potential hazards in the Coastal Zone.
- (c) In evaluating alternates, emphasis shall be placed on improvement of drainage. However, enlarging of existing tidegates, dredging of

presently undredged sections of creek, or construction of new structures shall be allowed only when no less environmentally damaging alternate is feasible, and only when adequate mitigation is provided and only when not located within a wetland. If mitigation for said development is provided in the form of a fully approved restoration project such development may be permitted in a wetland.

- (d) The City shall seek funding to develop a comprehensive stream maintenance program for streams within its jurisdiction. This project shall provide for stream rehabilitation projects designed to improve flow capacity, minimize channel erosion, and enhance riparian habitat; annual channel inspection to identify and remove barriers to anadromous fish, debris dams, and obsolete flood control or scientific study facilities.

H-5 The City shall seek funds to establish a hazard inspection and abatement program to reduce the risk associated with hazardous structures to an acceptable level.

Appendix J

TECHNICAL REPORT AND POLICY RECOMMENDATIONS

LOCATING AND PLANNING NEW DEVELOPMENT

COASTAL ACT POLICIES (As amended February 1986)

30244. Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.
30250. (a) New development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land division, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50% of the usable parcels in the area have been developed and created parcels would be no smaller than the average size of surrounding parcels.
- (b) Where feasible, new hazardous industrial development shall be located away from existing developed areas.
- (c) Visitor-serving facilities that cannot feasibly be located in existing developed areas shall be located in existing isolated developments or at selected points of attraction for visitors.
30252. The location and amount of new development should maintain and enhance public access to the coast by (1) facilitating the provision or extension of transit service (2) providing commercial facilities within or adjoining residential development or in other areas that will minimize the use of coastal access roads, (3) providing non-automobile circulation within the development, (4) providing adequate parking facilities or providing substitute means of serving the development with public transportation, (5) assuring the potential for public transit for high intensity uses such as high-rise office buildings, and by (6) assuring that the recreational needs of new residents will not overload nearby coastal recreation areas by correlating the amount of development with local park acquisition and development plans with the provision of onsite recreational facilities to serve the new development.
30253. New development shall:
- (1) Minimize risks to life and property in areas of high geologic, flood and fire hazard.
- (2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs or cliffs.
- (3) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.

- (4) Minimize energy consumption and vehicle miles traveled.
- (5) Where appropriate, protect special communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational use.

OBJECTIVE

Develop a rural/urban boundary and identify actions necessary to maintain the boundary.

EXISTING CONDITIONS

Sewer

Sewage Collections and Treatment

The City of Arcata provides sewer service within the City limits. The present wastewater treatment facility provides advanced secondary to tertiary treatment with an outfall into Arcata Bay.

Prior to 1949, the City discharged directly into the Bay through a 24-inch outfall sewer. In 1949, a primary treatment plant was constructed which included a pumping station, a pre-aeration unit, primary clarifier, digester, and sludge drying beds. In 1956, a 55-acre oxidation pond was added, which was presumed to enable the plant to treat sewage for a population of about 20,000 people.

In 1966, the City added a chlorine contact basin and chlorinator unit, and in 1971, additional improvements included enlarged headworks capacity, another clarifier, and an aeration pond. In 1974, the City enlarged the chlorine contact basin and chlorination facilities, and a dechlorination unit was added.

Improvements completed in 1979 included a pump in the headworks to reduce the surcharge of water entering the facility, and modifications to the chlorinator. These modifications increased the capacity and detention time and additional pumps maintained discharge at a constant rate and eliminated tidal control of water flow. These additions increased plant capacity to 3 1/2 million gallons per day dry weather flow, and 10 million gallons per day peak hourly wet weather flow.

Faced with the stringent clean water regulations of the 1970s and the economic and environmental problems associated with the development of a proposed regional wastewater treatment plant, Arcata pursued an innovative treatment technology using wetlands. The wetlands have been made to polish the effluent to a higher standard and then use the effluent to enhance the productivity of restored freshwater marshes. The most recent treatment plant upgrade, completed in 1986, increased the plant capacity to 5 million gallons per day through the headworks, and 16.5 million gallons per day peak wet weather flow. New headworks, chlorine contact facility, renovated digestors and the addition of "treatment marshes" within the oxidation pond are the major changes to the treatment plant. As part of current treatment plant management, up to 2.3 million gallons per day of treated wastewater is routed

through the three freshwater marshes of the Arcata Marsh and Wildlife Sanctuary, then returned to the treatment plant for disinfection before discharge into Arcata Bay.

Communities in west Arcata are served by a major sewer transmission line which roughly parallels the City Limits. The line is 24-inches in diameter at the treatment plant and proceeds in incremental reductions to 12-inches in the north part of the City. All areas to the east of this line are provided with adequate sewage disposal for urbanization up to General Plan limits. The system relies on gravity flow except for lift stations on Samoa Boulevard, Bayside Road and several pumps along Old Arcata Road.

Water Service

The City of Arcata buys water from Humboldt Bay Municipal Water District which obtains its supply from the Mad River. The city provides water to users in Arcata, to a Simpson and Louisiana Pacific Mill, and to several areas outside the City including Pacific Manor and Jacoby Creek. Monthly water consumption ranges between 42 million and 56 million gallons. Water use is increasing at a rate roughly paralleling population growth. The main pumping station is located at Alliance Road north of Westwood Shopping Center; the system is controlled from the Water Department in the City corporation yard.

Water consumption within the City is variable. The housing mix and distribution of commercial areas further complicates patterns of water use. However, it is apparent that areas of mixed, predominantly residential development demand the least water. The one exception, as exemplified by Westwood 2, is low density residential housing with lawns and landscaping. Water demand for Westwood 2 is about 1 1/2 - 2 times that for mixed residential areas. Water demand by industrial areas and the University is about 2 - 3 times that for mixed commercial, and about 5 - 6 times that for mixed residential areas.

Most of the urban areas in the Coastal Zone are served by 6- and 8-inch looped lines. Water service distribution is similar to that for sewage; the water line conforms roughly to the western City Limit and is adequate for urban development to the east. Development to the west would require new water lines, except for the area adjacent to the Greenvew Subdivision. No significant alterations to the existing General Plan have been proposed. Since the capacities of the urban service systems are adequate to service existing General Plan development, no special allocation of service system capacity is required for coastal development.

Transportation

U.S. Highway 101 and State Route 255/Samoa Boulevard are the major through routes for vehicular traffic in the Coastal Zone. The average daily traffic count (ADT) on Highway 101 near Samoa Boulevard in 1985 was approximately 22,800 vehicles. Samoa Boulevard east of Highway 101 had an ADT in 1985 of 8,400 vehicles.

Circulation within the urbanized portion of the Coastal Zone is provided by a system of local arterial and collector streets, the major ones being "K",

"H", "G", Union, and Seventh Streets. Existing traffic flow is relatively smooth throughout the Coastal Zone, and the streets are generally below capacity with no significant traffic problems apparent.

Public transportation is provided by the Arcata and Mad River Transit System (A&MRTS). Since its inception in 1975, this community-owned bus system has seen an fluctuation in ridership levels over the years and had 107,000 riders in 1985.

The City of Arcata has adopted both Bicycle and Pedestrian Master Plans. These plans identify major bicycle and pedestrian routes and provide improvement and implementation schedules.

POLICY RECOMMENDATIONS

J-1 Locating and Planning New Development shall serve as the focus for coastal land use designations and policies. Recommendations developed in the Technical Reports shall be collated into a Coastal Land Use Element which shall be adopted as an Element of the City's General Plan. The Coastal Land Use Element shall contain the following sections:

- I. Urban Services Boundary
- II. Coastal Land Use Map
- III. Environmental Constraints
- IV. Developmental Constraints
- V. Urban Development
- VI. Public Facilities
- VII. Technical Appendices

J-2 The City shall, with concurrence from Humboldt County, designate a Urban Services Boundary line as shown on the map in Appendix J of the Arcata General Plan.

J-3 The City shall not provide urban services, nor approve urban developments outside the Urban Services Boundary. The following land designations are the only designations that shall be considered appropriate for land uses outside the Boundary:

- . Coastal Agriculture Exclusive
- . Coastal Natural Resource Protection
- . Coastal Public Facility
- . Coastal Public Facility (Parks)

J-4 Areas inside the Urban Services Boundary but outside the present City Limits shall not be approved for urban development until after they have annexed to the City.

J-5 The City shall retain discretion to extend domestic water and/or sewer services to existing residential units outside the Urban Services Boundary subject to the following guidelines:

- (a) The extension must be an emergency response to a failure of existing water and/or sewage disposal systems.

- (b) The capacity of the extension shall be limited to a size adequate to meet the existing residential requirements. No extension of trunk lines or oversized lines shall be permitted.
- (c) No new or additional uses may be permitted to have access to the extension.
- (d) No extension shall be permitted to serve uses that are clearly inconsistent with adopted Land Use Plans and Policies.
- (e) An annexation agreement shall be provided by the property owner.
- (f) The City may extend sewer and water service to serve intensive agricultural uses beyond the City limits and Urban Services Boundary subject to the following guidelines:
 - (1) The extension shall be only to serve the domestic needs of employees of an agricultural use.
 - (2) No new or additional uses may be permitted to have access to the extension.
 - (3) No agricultural chemicals or wastes may be discharged into the extension.
 - (4) The capacity of the extension shall be limited to a size adequate to meet the needs of the specific agricultural operation and shall be a pressurized system.
 - (5) In the event that the agricultural operation for which an extension is made ceases operation, the extension shall be disconnected from the City system and capped.

J-6 The City shall adopt the following Coastal Land Use Designations which shall serve as the basis for developing specific zoning districts. These are the same designations as used in the existing General Plan.

Residential

. Coastal Rural Residential	(0 to 12 p/na)
. Coastal Low Density Residential	(6.1 to 24 p/na)
. Coastal Medium Density Residential	(24.1 to 45 p/na)
. Coastal Medium-High Density Residential	(45.1 to 75 p/na)
. Coastal High Density Residential	(75.1 to 115 p/na)

p/na = persons per net acre

Commercial

- . Coastal General Commercial
- . Coastal Central Business District (CBD)
- . Coastal Thoroughfare Commercial

Industrial

- . Coastal Industrial Commercial
- . Coastal Heavy Industrial

Public and Quasi-Public

- . Coastal Public Facility
- . Coastal Public Facility (Parks)
- . Coastal Natural Resource Protection

Agricultural

- . Coastal Agriculture Exclusive (60 acre minimum parcel size)

J-7 The City shall encourage the use of Planned Development zoning as a means of providing a variety of housing types, land uses, and sufficient usable open space through innovative design. The Planned Development District should allow diversification in the relationship of buildings, structures, and open spaces while insuring substantial compliance to the base district regulations.

Appendix K

TECHNICAL REPORT AND POLICY RECOMMENDATIONS
COASTAL VISUAL RESOURCES AND SPECIAL COMMUNITIES

COASTAL ACT POLICIES

(As amended February 1986)

30251. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.
30253. New development shall: (5) Where appropriate, protect special communities and neighborhoods which, because of the unique characteristics, are popular visitor destination points for recreational uses.

"Special Communities and Neighborhoods" include the following:

1. Areas characterized by a particular cultural, historical, or architectural heritage that is distinctive in the Coastal Zone;
2. Areas presently recognized as important visitor destination centers on the coastline;
3. Areas with limited automobile traffic that provide opportunities for pedestrian and bicycle access for visitors to the coast;
4. Areas that add to the visual attractiveness of the coast.

"Highly Scenic Areas" generally include:

1. Landscape preservation projects designated by the State Department of Parks and Recreation in the California Coastline Preservation and Recreation Plan;
2. Open areas of particular value in preserving natural land forms and significant vegetation, or in providing attractive transitions between natural and urbanized areas;
3. Other scenic areas and historical districts designated by Cities and Counties.

OBJECTIVES

Determine if there are any viewsheds which ought to be protected, and if so, determine what mitigation measures ought to be required of development in the Coastal zone to preserve the City viewshed.

EXISTING CONDITIONS

Visual Resources

In defining what is meant by a visual resource, there is no escaping the use of some subjective criteria. In the context of the Coastal Act, "visual resources" refers primarily to natural scenery, unaltered or only minimally altered by human activities. Two areas within Arcata City Limits and the Coastal Zone conform to this definition. These are the Bay and its environs, and the agricultural lands to the south and west of the City.

Arcata has no waterfront community like that found in Eureka, yet the Bay plays an important role in the aesthetic character of the City. It can be seen from many points within the City Limits, and is the most noticeable natural feature visible from Highway 101, which serves as the southern entrance to Arcata.

In the Humboldt County Local Coastal Program: Visual technical study, one issue is identified in the Humboldt Bay area which is also pertinent to Arcata's concerns:

"Billboarding, as practiced along Highway 101, is almost certainly in conflict with Coastal Act policies."

The study refers to "billboarding as currently practiced, which can result in a too-random and distracting distribution of signs in highly scenic areas." While Arcata Bay is not one of the highly scenic areas designated for preservation in the California Preservation and Recreation Plan, it is one of the most important elements in Arcata's visual character.

The City's Land Use and Development Guide, effective December 20, 1985, permits signs designed to be read from any State expressway only in the Thoroughfare Commercial, Industrial Commercial and Heavy Industrial zones. The billboards along Arcata Bay are legal non-conforming uses and may remain indefinitely. The state is no longer granting permits for billboards along highways.

Agricultural land is the other dominant visual feature south and west of Arcata. Much of this pasture land was originally salt marsh; as a result of diking, the land is kept dry enough for agricultural uses, and is prevented from making the transition from grasses to brush and trees by the action of grazing. These two effects are the main human influence on the land, and produce pleasant rural views throughout most of the Coastal Zone.

Along South "I" Street and South "C" Street, there is some agricultural land visible. However, in the past the visual attractiveness of the area was severely reduced by the presence of scattered industrial debris. At the end of "I" Street, the old Arcata dump site transformed a scenic bayside recreation area into a wasteland. However, since 1979, Arcata has restored and enhanced approximately 120 acres of this degraded industrial land into productive, scenic and publically accessible wetlands and associated uplands.

Special Communities

Arcata contains two features which are covered under the Coastal Act definitions of "Special Communities and Neighborhoods."

Definition -

- (1) Areas characterized by a particular cultural, historical, or architectural heritage that is distinctive in the Coastal Zone.

Following recommendations in the Arcata General Plan, the City conducted a Historic Resources Inventory. In the Inventory, structures are classified either as Potential National Register Sites, or as Other Sites. The latter classification indicates that a building is of historic significance to the community although not of National Register importance. Seven houses in the Coastal Zone are listed as Potential National Register sites, and three houses are listed as Other Sites. All but one of these are located between Seventh Street, Fifth Street, "F" Street, and "J" Street.

The General Plan recommends that areas containing a significant number of structures worthy of preservation should be designated Neighborhood Preservation areas.

Definition -

- (2) Areas presently recognized as important visitor designation centers on the coastline.

The Arcata Marsh and Wildlife Sanctuary attracts birdwatchers from throughout California. The Sanctuary provides a large freshwater habitat near a predominantly marine environment, and contributes abundant nutrients to the local food web. For these reasons, birds congregate here in unusual numbers with more than 190 species being recorded in the vicinity. The Sanctuary is visited by students from HSU and College of the Redwoods, local grade schools and high schools, by naturalists who travel to the area specifically to observe birds, and by local nature enthusiasts. The Sanctuary presently encompasses over 170 acres and includes a trail network over 4.5 miles long. A portion of the Sanctuary is also of great interest to engineers and water planners as it contains one of the first wetlands developed and used for full scale wastewater treatment in the country.

The value of the pond is enhanced by its proximity to the Jacoby Creek Unit of the National Wildlife Refuge, a 65-acre expanse of high tidal flat and marsh between the Bay and a railroad right-of-way. Because of access problems, this refuge is used primarily by study groups, but plans are being developed to make the area more accessible to the public. The refuge provides food and resting opportunities for many bird species, including the rare California peregrine falcon. Once access problems are solved, the refuge will gain value as a visitor destination center.

Humboldt Bay is an important migratory bird hunting area being one of the major stops in Northern California for birds traveling the Pacific Flyway. Arcata Bay attracts as many hunters as South Bay, except for those seeking the Pacific Black Brant which congregates in South Bay. Hunters throughout the state visit Arcata Bay, making it an important visitor destination center.

Scenic Highway Element

In the Appendix K of the Arcata General Plan, 22 scenic routes in and around

Arcata are listed and their scenic features described. Three of these lie entirely within the Coastal Zone, and three are partially included in it (Table 1).

While most of these routes are described as passing through agricultural land and open space, it is also possible to see the Bay from many points along the roads. Commercial and residential structures along these scenic routes generally have not exceeded one story in areas where the view of the Bay would be obscured.

The Scenic Highway Element is consistent with the Coastal Act's desire to protect the scenic and visual qualities of coastal areas.

TABLE 1. SCENIC ROUTES WITHIN THE COASTAL ZONE

Old Arcata Road from the Seventh Street Overcrossing to Crescent Drive.	Pasture land, eucalyptus trees, all density development, curving roads.	Development on the Southside of Old Arcata Road should be limited to single family homes and structures of low elevation which would not block the view. Eucalyptus trees lining Old Arcata Road should be retained.
Bayside Cut-off from Highway 101 to Old Arcata Road.	Pasture land.	Maintain agricultural.
Fourth Street (Samoa Boulevard) from Sunnybrae area north to town.	Pasture land.	Maintain agricultural to the Southwest.
Highway 255 from "V" Street to Manila.	Agriculture, dunes and view of the Bay.	Maintain agricultural.
Janes Road from 11th Street to Simpson Mill.	Pasture land, pleasing view of homes.	Maintain agricultural to the west and residential to the east.
Highway 101 from Bayside Cut-off to the Mad River.	Landscaping.	Utilize natural vegetation for landscaping. Encourage billboard removal and keep the area between the highway and the Bay open.

TABLE 1 (CONTINUED)

South "I" Street, south of Eureka Southern Railroad Crossing.	Various wetland types, pasture land.	Maintain Natural Resource Protection and agricul- tural to west.
South "G" Street south of "H" Street.	Wetland, wooded area west and south of South "G" Street.	Maintain Public Facility and Natural Resource Protection.

POLICY RECOMMENDATIONS

- K-1 The City shall identify the following areas as Coastal Scenic Areas:
- (a) Arcata Bay tideland and water areas:
 - (b) All land designated as Natural Resources Protection on the Land Use Map;
 - (c) All land between Highway 101 and Old Arcata Road designated Agriculture Exclusive on the Land Use Map;
 - (d) All land on the western Arcata plain designated Agriculture Exclusive on the Land Use Map.
- K-2 The City shall follow the Environmental Impact Review procedures established in the Land Use and Development Guide for any proposed use in the Coastal Scenic Areas. An initial study that takes visual resources as consideration shall be prepared to determine the appropriate environmental document. If it is determined that the proposed use would significantly alter the appearance of natural landforms or would significantly block views from existing public thoroughfares to the Bay, then no permit shall be issued unless it can be shown that the proposed use will serve to restore or enhance a visually degraded area.
- K-3 The City shall establish a landscaped screen along the northern and eastern perimeters of the existing filled portion of the Corporation yard.
- K-4 The City shall require that new development or redevelopment in the industrial area surrounding South "G" Street provide dense landscaped screens along all perimeter lot lines visible from Highway 101.
- K-5 The City shall designate the following routes as Scenic Routes and shall establish guidelines to retain their scenic features: Old Arcata Road from the Seventh Street Overcrossing to Crescent Drive; Bayside Cut-off from Highway 101 to Old Arcata Road; Samoa Boulevard (State Highway 255)

from Sunny Brae to Manila; Janes Road from 11th Street to Simpson Mill; Highway 101 from Bayside Cut-off to Mad River; South "I" Street from Samoa Boulevard south, and South "G" Street from "H" Street to Highway 101.

- K-6 Billboards and off-site signs designed to be read from any State freeway or highway shall not be permitted in the Coastal Zone.
- K-7 It is the policy of the City to prevent the additional planting of landscaping along Highway 101 that would interrupt the scenic views from Highway 101 to the bay or eastward across the agricultural lands. It is further the policy of the City to work with Caltrans, Humboldt County, and the Commission to enhance scenic views along Highway 101.

Appendix L

TECHNICAL REPORT AND POLICY RECOMMENDATIONS

PUBLIC WORKS

COASTAL ACT POLICIES

(As amended February 1986)

30254. New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the Coastal Zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the service would not include new development inconsistent with this division. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal-dependent land uses, essential public services, and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.

OBJECTIVES

Determine if flood control measures, both existing and proposed, will damage natural environmental values in the creek habitat.

Determine the potential impacts of removing the McDaniel Slough tidegates and constructing dikes to allow natural tidal action.

Determine if the Arcata Wastewater Reclamation and Aquaculture project is consistent with Coastal Act policies regarding public works.

Determine if the present site of the Arcata Corporation yard is consistent with Coastal Act goals and if future expansion will be possible at the site.

EXISTING CONDITIONS

Flood Control

Lands south and west of Arcata, as well as most of the East Bay plain, were originally salt marsh. Through diking and filling, these areas have been converted to agricultural, commercial, and residential uses. However, because of low elevations and high water table, flooding still occurs.

Dikes have been constructed along the perimeter of the Bay and the banks of Janes Creek/McDaniel Slough, Gannon Slough, and Jacoby Creek. The major work on these dikes was done in the early 1900s with minimal maintenance being provided by the City and members of Reclamation District 768 in subsequent years.

The City maintains permits to dredge Janes Creek north of 11th Street and all of Jolly Giant Creek. Most dredging occurs in the urban sections of Janes Creek. No dredging takes place on Jacoby Creek, which is allowed to flood adjacent agricultural lands.

Changes in the City's flood control practices have been proposed, and are discussed in a report titled "Initial Study for the Proposed Expansion of the

Janes Creek Maintenance District and Related Projects." The report, prepared by the Humboldt County Natural Resources Division, deals with the proposal to expand Janes Creek Flood Control District to include the watersheds of Janes, Jolly Giant, Grotzman, and Beith Creeks. The plan includes the following projects.

- Construct new and larger tidegates on McDaniel Slough where it empties into Humboldt Bay.
- Install a 10' x 7' concrete box culvert under 11th Street replacing the existing 6' arch culvert.
- Install a 72-inch culvert under 17th Street, and excavate a channel from Jolly Giant Creek to McDaniel Slough to divert peak flows from Jolly Giant Creek to McDaniel Slough.
- Excavate a channel from the southwest side of the Greenview Area Subdivision, west of Liscomb Slough.
- Annual maintenance of Janes Creek/McDaniel Slough, Jolly Giant Creek, Grotzman Creek, and Beith Creek has been estimated at \$30,000 per year. It involves maintaining channels by removal of silt and aquatic growth within the streams.

The purpose of the expansion proposal is to give the Janes Creek Storm Maintenance District the authority and the tax base to finance storm maintenance projects within the watershed. The projects listed above are intended to speed storm waters through the City and adjacent areas with a minimum of damage to property, and to reduce the necessity for emergency flood control measures.

Expansion of the flood control district to control flooding on a watershed basis is environmentally sound and not in conflict with the Coastal Act. However, some of the proposed projects associated with the expansion could severely alter wildlife habitat along McDaniel Slough.

Of the proposed projects, those likely to have the greatest effect on the natural environment are (1) enlarging of the tidegates on McDaniel Slough and (2) dredging of presently undredged stretches of creek. McDaniel Slough between the tidegates and Samoa Boulevard was flanked by freshwater marsh which fluctuates in size according to rainfall and stream flow. This marsh provides a nesting and feeding area for waterfowl. Enlarging the tidegates would reduce seasonal flooding in this area, and thereby reduce the extent of the marsh habitat.

Dredging is proposed for the lower reaches of McDaniel Slough. According to the Natural Resources Division analysis, this would change the existing view of a freshwater marsh to one of a meandering slough. Dredging Janes Creek along Arlington Way is not expected to change existing views significantly.

Removing the tidegates at the mouth of McDaniel Slough was also discussed in this report, as well as the proposed county mitigation bank restoration proposed for the site. The following effects may occur if the tidegates are removed:

- The freshwater marsh would become an estuary.

- Slough water would become brackish and unsuitable for irrigation.
- Salt water intrusion into local wells could occur.
- Extensive dredging required for diking of the banks would damage the land/water interface.
- Anadromous salmonids (salmon and trout) would have free access to the upper sections of the stream.

The Arcata Marsh and Wildlife Sanctuary

The City of Arcata and the California Coastal Conservancy have restored 118 acres of coastal wetlands and associated upland habitats. These 118 acres plus an additional 54 acres of ponds and wetlands previously created by the City have been combined to form the Arcata Marsh and Wildlife Sanctuary. The Sanctuary, now covering over 170 acres and boasting more than 4.5 miles of trails allows public access to all of the bay shoreline within the Arcata City Limits.

The Sanctuary has become an important element in the City by returning public access to an area previously inaccessible because of private industry and public hazards, by significantly increasing those habitat types previously reduced around the bay, and by utilization of portions of the Sanctuary for wastewater treatment, reuse and enhancement. This public works function has therefore placed all phases of the management of the Sanctuary in the Public Works Department of the City.

Sewage Collections and Treatment

The City of Arcata provides sewer service within the City limits. The present wastewater treatment facility provides advanced secondary to tertiary treatment with an outfall into Arcata Bay.

Prior to 1949, the City discharged directly into the Bay through a 24-inch outfall sewer line. In 1949, a primary treatment plant was constructed which included a pumping station, pre-aeration unit, primary clarifier, digester, and sludge drying beds. In 1956, a 55-acre oxidation pond was added, which was presumed to enable the plant to treat sewage for a population of about 20,000 people.

In 1966, the City added a chlorine contact basin and chlorinator unit; and in 1971, additional improvements included enlarged headworks capacity, another clarifier, and an aeration pond. In 1974, the City enlarged the chlorine contact basin and chlorination facilities, and a dechlorination unit was added.

Improvements completed in 1979 included a pump in the headworks to reduce the surcharge of water entering the facility, and modifications to the chlorinator. These modifications increased the capacity and detention time and additional pumps will maintained discharge at a constant rate and

eliminated tidal control of water flow. These additions increased plant capacity to 3 1/2 million gallons per day dry weather flow, and 10 million gallons per day peak hourly wet weather flow.

Faced with the stringent clean water regulations of the 1970s and the economic and environmental problems associated with the development of a proposed regional wastewater treatment plant, Arcata pursued an innovative treatment technology using wetlands. The wetlands have been made to polish the effluent to a higher standard and then use the effluent to enhance the productivity of restored freshwater marshes. The most recent treatment plant upgrade, completed in 1986, increased the plant capacity to 5 million gallons per day through the headworks, and 16.5 million gallons per day peak wet weather flow. New headworks, chlorine contact facility, renovated digestors and the addition of "treatment marshes" within the oxidation pond are the major changes to the treatment plant. As part of current treatment plant management, up to 2.3 million gallons per day of treated wastewater is routed through the three freshwater marshes of the Arcata Marsh and Wildlife Sanctuary, then returned to the treatment plant for disinfection before discharge into Arcata Bay.

Communities in west Arcata are served by a major sewer transmission line which roughly parallels the City Limits. The line is 24-inches in diameter at the treatment plant and proceeds in incremental reductions to 12-inches in the north part of the City. All areas to the east of this line are provided with adequate sewage disposal for urbanization up to General Plan limits. The system relies on gravity flow except for lift stations on Samoa Boulevard, Bayside Road and several pumps along Old Arcata Road.

Water Service

The City of Arcata buys water from Humboldt Bay Municipal Water District which obtains its supply from the Mad River. The City provides water to users in Arcata, to a Simpson and Louisiana Pacific Mill, and to several areas outside the City including Pacific Manor and Jacoby Creek. Monthly water consumption ranges between 42 and 56 million gallons. Water use is increasing at a rate roughly paralleling population growth. The main pumping station is located at Alliance Road north of Westwood Shopping Center; the system is controlled from the Water Department in the City corporation yard.

Water consumption within the City is variable. The housing mix and distribution of commercial areas further complicates patterns of water use. However, it is apparent that areas of mixed, predominantly residential development demand the least water. The one exception, as exemplified by Westwood 2, is low-density residential housing with lawns and landscaping. Water demand for Westwood 2 is about 1 1/2 - 2 times that for mixed residential areas. Water demand by industrial areas and the University is about 2 - 3 times that for mixed commercial, and about 5 - 6 times that for mixed residential areas.

Most of the urban areas in the Coastal Zone are served by 6- and 8-inch looped lines. Water service distribution is similar to that for sewage; the water line conforms roughly to the western City Limit and is adequate for urban development to the east. Development to the west would require new water lines, except for the area adjacent to Greenview Subdivision. No

significant alterations to the existing General Plan have been proposed. Since the capacities of the urban service systems are adequate to service existing General Plan development, no special allocation of service system capacity is required for coastal development.

Corporation Yard

The City corporation yard is located on the Bay shore at the south end of "C" Street. In addition to the wastewater treatment facility, the yard houses the City Street Department, the Water Department, the Central Garage for City vehicles, bus storage for Arcata and Mad River Transit Authority, a crematorium, the aquaculture facility, and a wetland wastewater treatment research area and associated water laboratory. The City owns about 30 acres at the yard site, of which most has been developed. About 1/2 acre of the corporation yard is upper tidal marsh, and subject to flooding at high tide.

Future use of the corporation yard facilities will not be subject to environmental or design constraints, providing additional development is limited to the area within the corporation yard boundary.

POLICY RECOMMENDATIONS

- L-1 To protect structures and critical facilities in the Coastal Zone, and to provide protection of existing habitat values, the City shall encourage and promote flood protection practices which manage flooding problems on a watershed basis.
- (a) The City shall encourage the expansion of Janes Creek Flood Control District to include the watersheds of Janes, Jolly Giant, Grotzman, and Beith Creeks, or shall otherwise coordinate with the County to alleviate existing flooding problems.
 - (b) The newly formed district or designated agency shall evaluate alternate flood control measures and select a flood control plan that improves drainage and minimizes potential hazards in the Coastal Zone.
 - (c) In evaluating alternates, emphasis shall be placed on improvement of drainage. However, enlarging of existing tidegates, dredging of presently undredged sections of creek, or construction of new structures shall be allowed only when no less environmentally damaging alternate is feasible, only when adequate mitigation is provided, and only when not located within a wetland. If mitigation for said development is provided in the form of a fully approved restoration project, such development may be permitted in a wetland.
- L-2 The City's proposed wastewater reclamation and aquaculture project is consistent with Coastal Act policies and requires no special provisions in Arcata's General Plan.
- L-3 The City shall restrict development of the Corporation Yard facilities to existing filled lands.
- L-4 The City has determined that no special allocation of urban services is required in the Coastal Planning Area.

Appendix M

TECHNICAL REPORT AND POLICY RECOMMENDATIONS

INDUSTRIAL DEVELOPMENT

COASTAL ACT POLICIES

(As amended February 1986)

30255. Coastal-dependent developments shall have priority over other developments on or near the shoreline. Except as provided elsewhere in this division, coastal-dependent developments shall not be sited in a wetland. When appropriate, coastal related developments should be accommodated within a reasonable proximity to the coastal-dependent uses they support
30260. Coastal-dependent industrial facilities shall be encouraged to locate or expand within existing sites and shall be permitted reasonable long-term growth where consistent with this division. However, where new or expanded coastal-dependent industrial facilities cannot feasibly be accommodated consistent with other policies of this division, they may nonetheless be permitted in accordance with this section and Section 30261 and 30262 if (1) alternative locations are infeasible or more environmentally damaging; (2) to do otherwise would adversely affect the public welfare; and (3) adverse environmental effects are mitigated to the maximum extent feasible.

OBJECTIVES

Determine what types of industrial uses are compatible with coastal policies regarding coastal visual resources, adjacent natural areas, hazards, and other coastal concerns, and whether designated industrial areas are suitable for the identified uses.

EXISTING CONDITIONS

Industrial land lying within Arcata City Limits and the Coastal Zone occurs in the southern part of the City, and forms an industrial corridor extending from South "G" Street north to 16th Street. This area includes 275 acres of industrial zoned land; about 238 of these acres fall within the Coastal Zone. One industrial area located within the Coastal Zone but not within City Limits is the 22-acre parcel at the intersection of "V" Street and Samoa Boulevard. Half of this 22 acres is occupied by Humboldt Redwood Products; the other 11 acres is undeveloped.

Most of the industries within the Coastal Zone rely on the forestry industry for raw materials. Located here are Harris Pine Mills, Pacific Clears Inc., Beaver Lumber Company, and Johnson Industries. Industrial Electric Service Company is the only other large industry in the Coastal Zone not dependent on forest products. A number of commercial uses are located in the industrial zone along South "G" Street and Samoa Boulevard.

Industrial firms within the Coastal Zone are distributed over a large area, with much intervening land. Most of this land is presently being used for industrial purposes while other sites have supported milling, barrel manufacturing, and storage operations in the past. Where signs of these industries remain, the land presents a littered appearance.

According to figures included on the 1986 vacant lands maps prepared by the

City of Arcata, about 37 of the 238 acres within the Coastal Zone are undeveloped. Most of this land is owned by the companies occupying parcels adjacent to the undeveloped areas. An additional 11 acres of undeveloped land is located outside the City Limits.

TABLE 1: UNDEVELOPED INDUSTRIAL LAND IN THE COASTAL ZONE

Within City

<u>Owner</u>	<u>Acreage</u>
Mary Schmidbauer	10
Beaver Lumber Company	20
Schmidbauer Lumber Company	<u>7</u>
Total	56

Outside of City

R. G. Grant	<u>11</u>
Total	67

Current Zoning

Industrial land south of Samoa Boulevard is flanked by agricultural land to the west, by agricultural and residential to the east, and by marsh to the south. The marsh is zoned Natural Resource Protection.

Between Samoa Boulevard and the Coastal Zone boundary, industrial land borders agricultural zoning to the west and commercial zoning to the east. The industrial area outside City Limits and within the Coastal Zone is surrounded by agricultural land on three sides and residential land on the north.

Industrial zoned land within the Coastal Zone and the City Limits is in the Industrial Commercial or Heavy Industrial Zoning Districts. Industrial Commercial zoning district permits general manufacturing, research and development, and wholesale/warehousing uses. Agricultural, commercial, heavy industrial, and public uses may also be permitted in this zone upon the granting of a conditional use permit. All industrial uses must conform to a series of Performance Standards that deal with noise, lights, airborne emissions, water quality, traffic, vibrations, electronic interference, and flammable materials. The Heavy Industrial district does not allow commercial use but does allow lumber milling and other heavy industrial uses with a Use Permit.

The 22-acre parcel located within the Coastal Zone but not within the City limits is zoned Limited Industrial or M-L by Humboldt County. The County's M-L Zone is intended to apply to areas in which light manufacturing and heavy commercial uses of the non-nuisance type and large administrative facilities are the desirable predominant uses.

Coastal Dependent Developments

Coastal dependent developements are those that require shoreline locations to be functional. Such uses as fishing, aquaculture, and port or marina facilities are coastal dependent. Coastal dependent industries which may come under the City's influence are commercial aquaculture activities.

Oysters for the fresh seafood market are currently raised in the Mad River Slough west of Arcata. Of the 1,500 acres of tidelands under Arcata's control, two small plots are currently leased for oyster growing. However, there has been no activity on these leases to date mainly due to past water quality problems. Over the past 5 years, numerous changes have occurred around Arcata Bay that were aimed at improving the Bay's water quality. These changes have ranged from eliminating septic tanks in some areas, stream restoration and erosion control, to the upgrading of Arcata's wastewater treatment plant. It is suspected that these improvements will not change the "conditional" status of Arcata Bay, but will shorten the time that oyster growers cannot harvest. If this in fact happens, north Arcata Bay will be viable for oyster culture expansion.

The City of Arcata has experimented with various freshwater and marine species of fish and invertebrates, in cooperation with Humboldt State University to explore aquaculture products that may be commercially viable around the bay. Of the species tested, Pacific salmon and trout have been the main focus and have met with the greatest success. Using a mixture of wastewater and seawater to rear salmon juveniles at a lower than traditional costs, salmon, steelhead, and cutthroat trout have been produced in an effort to successfully help return self-sustaining runs of these fish back to the tributaries of Arcata Bay. The facility could, providing that environmental and political concerns were satisfied, some day expand into a commercial salmon ranching mode. This salmon ranch is not envisioned as a full-scale capital and labor intensive industry, but rather as a small testing facility which would engage in the commercial sale of salmon that would be excess to the stream and fishery restoration goals.

Compatibility with Coastal Act Policies

With the exception of Section 1-0220.2 (c), the City's Industrial Zoning District and District Regulations are compatible with Coastal Policy.

Section 1-0220.2 (c) provides that the following uses may occur upon the granting of a Conditional Use Permit:

- 1-0220.2 (c) Industrial Uses - Heavy Manufacturing—Animal products processing plants, drilling for oil or gas, lumber milling, log decks, salvage yards, and smelting and reduction of metallic ores. Manufacturing, refining, and storage of petroleum products, acids, cement, concrete,

pottery, asphaltic paving products, lime, explosives, fireworks, gas, glue, gypsum, plaster of paris, and inflammable fluids or gases.

These uses, if not properly designed, may be inconsistent with the following Coastal Act Policies:

Hazard and Safety Considerations

Section 30253 which requires that new development minimize risks to life and property in areas of high geologic and flood hazard.

Section 30263 which prohibits the construction or expansion of refineries or petrochemical facilities in seismically hazardous areas.

Section 30250 (b) which requires that new hazardous industrial development be located away from existing developed areas.

All of the industrially zoned land within the Coastal Zone is located in a potential liquefaction area, and is contiguous to the developed area of the City. Most of the heavy manufacturing uses deal with products that could be hazardous to life and property in the event of a natural catastrophe.

Visual Considerations

Section 30251 which requires that development be sited to protect views to and along the coast, and requires that development be visually compatible with surrounding areas.

Most of the heavy manufacturing uses require large facilities that would be out of scale with existing development. Many of the uses could also emit large volumes of smoke and dust that would degrade the view of the coast.

Lumber milling and log decks are a fundamental aspect of the north coastal economy and viewshed. Restrictions beyond those normally required by City Use Permit conditions, Performance Standards and the Land Use and Development Guide Standards are not recommended.

POLICY RECOMMENDATIONS

M-1 The City shall issue Conditional Use Permits in industrial zoned areas for the following heavy manufacturing uses in the Coastal Zone only when no feasible less environmentally damaging alternative is available, and only when adequate mitigation has been demonstrated: Salvage yards, drilling for gas or oil, the smelting and reduction of metallic ores, manufacturing, refining, and storage of petroleum products, acids, cement, concrete, pottery, asphaltic paving products, lime, explosives, fireworks, gas, glue, gypsum, plaster of paris, and inflammable fluids or gases. Conditions for approval shall include, as a minimum, the following criteria:

- Assurance to the satisfaction of a registered geologist, a

registered civil engineer with expertise in soils, or a certified engineering geologist of adequate protection from groundshaking.

- No significant adverse impacts on aquatic habitat.
- Adequate protection from flooding.
- Assurance to the satisfaction of the Design Assistance Committee that visual resources will not be degraded.

M-2 The City shall issue conditional use permits in industrial zoned areas for animal processing plants within the Coastal Zone only for coastal dependent industries. Conditions of approval shall include, as a minimum:

- Assurance to the satisfaction of a registered geologist, a registered civil engineer with expertise in soils, or a certified engineering geologist of adequate protection from groundshaking.
- No significant adverse impacts on aquatic habitat.
- Adequate protection from flooding.
- Assurance to the satisfaction of the Design Assistance Committee that visual resources will not be degraded.

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ARCATA COASTAL LAND USE PLAN AMENDMENTS

ADOPTED ON

11/16/94

BY RESOLUTION 945-26

BY THE CITY OF ARCATA

NOTE: The word "proposed" on the following pages is considered to be deleted as amendments have been adopted and are no longer proposed.

CITY OF ARCATA GENERAL PLAN
COASTAL LAND USE ELEMENT
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LEGEND

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[deleted text]	DELETED TEXT.
<u>*</u>	NEW TEXT.

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* Section II	Coastal Land Use Map
* Section III	Environmental Constraints
* Section IV	Development Constraints
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* Appendix A	Shoreline Access
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<u>Appendix N</u>	<u>Coastal Wetland Map</u>

References

The following table is not part of the proposed amendments, but is offered as a tool for understanding the relationship of the actual policies, and the "policy recommendations" in the Appendices. Note that recommendations for specific policies sometimes occur in more than one appendix. Only those, proposed to be amended, are shown.

<u>ACTUAL POLICY</u>	<u>POLICY RECOMMENDATION</u>
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III-3 (b)	H-4 (b), L-1 (b)
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III-6 (b)	D-1 (b)
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III-6 (d)	D-1 (d)
IV-3	D-6; E-5, E-6, E-7
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VI-8 (a)	A-3 (a)
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CITY OF ARCATA GENERAL PLAN
COASTAL LAND USE ELEMENT
POLICIES
[Excerpts containing proposed amendments]

LEGEND

[deleted text] DELETED TEXT.

underlined text NEW TEXT.

Section I. URBAN SERVICES BOUNDARY [no changes proposed]

Section II. COASTAL LAND USE MAP

- II-1. The City shall adopt the following Coastal Land Use designation which shall serve as the basis for developing specific zoning districts. With the Exception of Forest Hillside and Residential Agriculture, these [These] are the same designations as used in the [existing] General Plan for areas not within the Coastal Zone. Note that the p/na (persons per net acre) figures are not intended be fixed numbers but indicate approximate numbers of persons each zone can be expected accommodate.

Residential

- | | |
|---|------------------------------|
| * Coastal Rural Residential | (up to [12] <u>6</u> p/na) |
| * Coastal Low Density Residential | (up to [24] <u>20</u> p/na) |
| * Coastal Medium Density Residential | (up to [45] <u>42</u> p/na) |
| * Coastal Medium-High Density Residential | (up to [75] <u>67</u> p/na) |
| * Coastal High Density Residential | (up to [115] <u>88</u> p/na) |

[p/na = persons per net acre]

Commercial

- * Coastal General Commercial
- * Coastal Central Business District Commercial (CBD)
- * Coastal Thoroughfare Commercial

Industrial

- * Coastal Industrial Commercial
- * Coastal Heavy Industrial

Public and Quasi-Public

- * Coastal Public Facility
- * Coastal Public Facility (Parks)
- * Coastal Natural Resource Protection

Agricultural

* Coastal Agriculture Exclusive (60 ac. min. parcel area)

Section III. ENVIRONMENTAL CONSTRAINTS

III-3. To protect structures and critical facilities in the Coastal Zone, and to provide protection of existing habitat values, the City shall encourage and promote flood protection and stormwater drainage management practices which [manage] address flooding problems and drainage on a watershed basis.

[(a) The City shall encourage the expansion of Janes Creek Flood Control District to include the watersheds of Janes; Jelly Giant; Gretzman; Campbell; and Beith Creeks; or shall otherwise coordinate with the County to alleviate existing flooding problems.]

(a) The City shall establish a Stormwater Utility to address stormwater drainage and flood control, including management of all waterways (creeks, sloughs, drainage ditches) and drainage structures City-wide.

(b) The [newly formed district of designated agency] stormwater master plan shall evaluate alternate flood control measures and select a flood control plan that improves drainage and minimizes potential hazards in the Coastal Zone.

(c) In evaluating alternates, emphasis shall be placed on improvement of drainage. However, enlarging of existing tidegates, dredging of presently undredged sections of creek, or construction of new structures shall be allowed only when no less environmentally damaging alternate is feasible, only when adequate mitigation is provided, and only when not located within a wetland. If mitigation for said development is provided in the form of a fully approved restoration project such development may be permitted in a wetland.

(d) The City shall seek funding to develop a comprehensive stream maintenance program for streams within its jurisdiction. This program shall provide for stream rehabilitation projects designed to improve flow capacity, minimize channel erosion, and enhance aquatic and riparian habitat; annual channel inspection to identify and remove barriers to anadromous fish, debris dams, and obsolete flood control or scientific study facilities.

- (e) The City shall seek assistance and ultimately develop a comprehensive plan that identifies storm drain, point and non-point pollution sources, educates the public and businesses about the nature of waste treatment and its importance to Arcata's Creeks, and requires pre-treatment of waste by the identified pollution sources.

III-6. To protect riparian habitats and to minimize erosion run-off, and interference with surface water flow, the City shall [establish Riparian Buffer Areas along all] adopt a Creeks Management Plan addressing streams and sloughs within [the] Arcata's Coastal Zone.

The City shall add a new [section, Riparian Buffer Areas,] combining zone, applying to creek and riparian areas and implementing the creek management plan, to Article [4] 2 of the City's Coastal Land Use and Development Guide. This new section will formalize the city's commitment to protection of riparian habitat by defining and identifying such habitat and applying the following regulations within the buffer area.

- (a) New development and redevelopments shall maintain or restore a natural vegetation buffer strip along all designated streams. This buffer strip shall be subject to the following definitions:

[Distinct Riparian Vegetation - 100 feet from the outer edge of the existing riparian corridor: all of Jacoby Creek. Existing riparian corridor includes those areas adjacent to the creek that are presently dominated by trees and other vegetation characteristic of streamside vegetation.]

[Channeled Creeks - 25 from the center line of the creek: all of Grotzman Creek; lower Beith Creek; all of Campbell Creek; and Jelly Giant Creek above Butcher's Slough; and Janes Creek above McDaniel's Slough.]

[Sloughs - 25 feet from the outer edge of the slough area; McDaniel Slough; Cannon Slough; and Butcher Slough.]

Creek Zone - the area that is twenty-five (25) feet outward from the top of bank, or the area bounded by the FEMA Flood Zone A line, whichever is greater, except that in no case will the creek zone on either side of a creek be wider than 100 feet from the average low flow line of that creek.

Riparian Corridor - areas (along creeks) identified as "riparian corridors" on the Arcata Coastal Wetlands Map. By virtue of their wetland characteristics, riparian corridors will be

regulated as wetlands where the riparian corridors extend beyond the creek zone.

Channeled Creeks - all of Grotzman Creek, lower Beith Creek, all of Campbell Creek, and Jolly Giant Creek above Butcher's Slough, and Janes Creek above McDaniel's Slough.

Sloughs - McDaniel Slough, Gannon Slough, and Butcher Slough.

- (b) Indigenous vegetation shall be retained in the [buffer areas] creek zone.
- (c) Fencing that crosses a stream channel, that acts as a barrier to anadromous fish, or acts as a collector of debris shall not be permitted.
- (d) Where opportunities arise, the City shall require fencing along channels to prevent further bank erosion by livestock.

Section IV. DEVELOPMENT CONSTRAINTS

IV-3. The City shall adopt a Coastal Wetlands Map showing the location of wetlands, riparian corridors and uplands within the Coastal Zone. All development within the areas identified on the map as wetland or riparian corridor shall require compliance with the [~~Coastal Wetlands Development Standards of~~] Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide. The City shall also develop regulations for areas in the Coastal Zone that are not designated on the Coastal Wetlands Map but are determined to be wetlands.

The City shall establish a Wetlands Buffer Area to protect the areas shown as wetlands on the Coastal Wetlands Map. The purpose of the Wetland Buffer Area is to identify areas, in the vicinity of a wetland, that may need special development restrictions in order to protect the wetland.

All development within the buffer areas shall comply with the [~~Wetlands Buffer Area Development Standards of~~] Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide.

The City may establish a "Modified Wetland Buffer Area" to be designated once development restrictions are specified within a Wetland Buffer Area. The purpose of the Modified Wetland Buffer Area is to avoid unnecessary development restrictions on properties not containing the wetland, even though those properties were

initially in the Wetland Buffer Area, once protective restrictions for a wetland have been set in place. If a wetland is adequately protected from development, the Wetland Buffer Area should be modified to exclude those properties, development on which will not affect the wetland.

The City shall designate and zone all areas shown as wetlands or riparian corridor on the Coastal Wetlands Map as either Coastal Agriculture Exclusive, Coastal Natural Resource Protection, or Coastal Public Facility. The :WCP Wetland and Creek Protection Combining Zone will also apply to these areas. Wetland Buffer Areas, and setback areas specifically required to protect the wetlands shall also automatically carry the :WCP Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide.

IV-9. [beginning with the last sentence] The location of the wetlands shall be determined by the use of the adopted Coastal Wetlands Map except that it is not the intent of this policy to exclude, from regulation, wetlands not shown on the Coastal Wetlands Map.

IV-10. If land divisions are allowed creating new parcels mapped as wetlands on the adopted Coastal Wetlands Map, such divisions shall require the recordation of deed restrictions providing that no filling would be allowed in the wetland portion of the parcel in connection with the new development other than that permitted under Section 30233 of the Coastal Act or the [~~Coastal Wetland Development Standards~~] :WCP Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide. [~~and that~~] The deed restriction shall further provide that the use of the newly created parcel would be limited to grazing or similar agricultural uses consistent with the Coastal Agricultural Exclusive zoning district.

IV-20. [This policy was recently added per LCP Amendment No. 1-92; City file # is LCP Amendment #5; no changes proposed]

New residential uses, other than caretaker's quarters, shall only be permitted in industrial areas where the potential impacts on the residents have been addressed and the residents themselves will not create hardships for the operators of the industries. special Use Permit criteria have been developed to implement this policy.

Section V. URBAN DEVELOPMENT [no changes proposed]

Section VI. PUBLIC FACILITIES

VI-8. The City shall seek funding to establish a system of foot trails and interpretive sites along the Arcata Bay shore subject to the following guidelines:

- (a) All planning and development in the area that is both south of Samoa Boulevard and west of Highway 101 and which is identified as wetlands or riparian corridor shall be subjected to review by the [Marsh and Wildlife Sanctuary Task Force] Arcata Wetlands and Creeks Advisory Committee, or its equivalent, for consistency with the goals and management of the Marsh and Wildlife Sanctuary.

[no changes to remaining portion of this policy]

VI-10. The City shall maintain the existing facilities of the Arcata Marsh and Wildlife Sanctuary and construct new facilities consistent with the plan developed by the [then] Marsh Task Force or its equivalent (currently the Arcata Wetlands and Creeks Advisory Committee) and adopted by the City Council.

CITY OF ARCATA GENERAL PLAN
COASTAL LAND USE ELEMENT
TECHNICAL REPORT AND POLICY RECOMMENDATIONS
[Excerpts containing proposed amendments]

LEGEND

[deleted text] DELETED TEXT.

underlined text NEW TEXT.

Appendix A SHORELINE ACCESS

POLICY RECOMMENDATIONS

A-3 The City shall seek funding to establish a system of foot trails and interpretive sites along the Arcata Bay shore subject to the following guidelines:

- (a) All planning and development in the area that is both south of Samoa Boulevard and west of Highway 101 and which is identified as wetlands or riparian corridor shall be subjected to review by the [Marsh and Wildlife Sanctuary Task Force] Arcata Wetlands and Creeks Advisory Committee, or its equivalent, for consistency with the goals and management of the Marsh and Wildlife Sanctuary.

[no changes to remaining portion of this policy]

Appendix B RECREATION AND VISITOR SERVING FACILITIES

POLICY RECOMMENDATIONS

B-4 The City shall maintain the existing facilities of the Arcata Marsh and Wildlife Sanctuary and construct new facilities consistent with the plan developed by the [then] Marsh Task Force or its equivalent (currently the Arcata Wetlands and Creeks Advisory Committee) and adopted by the City Council.

Appendix C [HOUSING: deleted in 1987]

Appendix D WATER AND MARINE RESOURCES

EXISTING CONDITIONS; Maintenance Programs; add, following the last paragraph:

The City Council reconstituted the Task Force into the Wetlands and Creeks Advisory Committee in 1992. This Committee serves in an advisory capacity on matters relating to policies affecting creeks, wetland and tideland resources in Arcata.

POLICY RECOMMENDATIONS

D-1 To protect riparian habitats and to minimize erosion run-off, and interference with surface water flow, the City shall [establish Riparian Buffer Areas along all] adopt a Creeks Management Plan addressing streams and sloughs within [the] Arcata's Coastal Zone.

The City shall add a new [section; Riparian Buffer Areas;] combining zone, applying to creek and riparian areas and implementing the creek management plan, to Article [4] 2 of the City's Coastal Land Use and Development Guide. This new section will formalize the city's commitment to protection of riparian habitat by defining and identifying such habitat and applying the following regulations within the buffer area.

(a) New development and redevelopments shall maintain or restore a natural vegetation buffer strip along all designated streams. This buffer strip shall be subject to the following definitions:

[Distinct Riparian Vegetation - 100 feet from the outer edge of the existing riparian corridor: all of Jacoby Creek. Existing riparian corridor includes those areas adjacent to the creek that are presently dominated by trees and other vegetation characteristic of streamside vegetation.]

[Channeled Creeks - 25 from the center line of the creek: all of Grotzman Creek; lower Beith Creek; all of Campbell Creek; and Jelly Giant Creek above Butcher's Slough; and James Creek above McDaniel's Slough.]

[Sloughs - 25 feet from the outer edge of the slough area; McDaniel Slough; Cannon Slough; and Butcher Slough.]

Creek Zone - the area that is twenty-five (25) feet outward from the top of bank, or the area bounded by the FEMA Flood Zone A line, whichever is greater, except that in no case will the creek zone on either side of a creek be wider than 100 feet from the average low flow line of that creek.

Riparian Corridor - areas (along creeks) identified as "riparian corridors" on the Arcata Coastal Wetlands Map. By virtue of their wetland characteristics, riparian corridors will be regulated as wetlands where the riparian corridors extend beyond the creek zone.

Channeled Creeks - all of Grotzman Creek, lower Beith Creek, all of Campbell Creek, and Jolly Giant Creek above Butcher's Slough, and Janes Creek above McDaniel's Slough.

Sloughs - McDaniel Slough, Gannon Slough, and Butcher Slough.

- (b) Indigenous vegetation shall be retained in the [buffer areas] creek zone.
 - (c) Fencing that crosses a stream channel, that acts as a barrier to anadromous fish, or acts as a collector of debris shall not be permitted.
 - (d) Where opportunities arise, the City shall require fencing along channels to prevent further bank erosion by livestock.
- D-2 The City shall seek funding to develop a comprehensive stream maintenance program for streams within its jurisdiction. This program shall provide for stream rehabilitation projects designed to improve flow capacity, minimize channel erosion, and enhance aquatic and riparian habitat; annual channel inspection to identify and remove barriers to anadromous fish, debris dams, and obsolete flood control or scientific study facilities.
- D-4 The City shall seek assistance and ultimately develop a comprehensive plan that identifies storm drain, point and non-point pollution sources, educates the public and businesses about the nature of waste treatment and its importance to Arcata's Creeks, and requires pre-treatment of waste by the identified pollution sources.
- D-5 If land divisions are allowed creating new parcels mapped as wetlands on the adopted Coastal Wetlands Map, such divisions shall require the recordation of deed restrictions providing that no filling would be allowed in the wetland portion of the parcel in connection with the new development other than that permitted under Section 30233 of the Coastal Act or the [Coastal Wetland Development Standards] WCP Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development

Guide. [and that] The deed restriction shall further provide that the use of the newly created parcel would be limited to grazing or similar agricultural uses consistent with the Coastal Agricultural Exclusive zoning district.

- D-6 The City shall adopt a Coastal Wetlands Map showing the location of wetlands, riparian corridors and uplands within the Coastal Zone. All development within the areas identified on the map as wetland or riparian corridor shall require [a Coastal Wetlands Development Standards of] compliance with the Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide. The City shall also develop regulations for areas in the Coastal Zone that are not designated on the Coastal Wetlands Map but are determined to be wetlands.

The City shall establish a Wetlands Buffer Area to protect the areas shown as wetlands on the Coastal Wetlands Map. The purpose of the Wetland Buffer Area is to identify areas, in the vicinity of a wetland, that may need special development restrictions in order to protect the wetland.

All development within the buffer areas shall comply with the [Wetlands Buffer Area Development Standards of] Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide.

The City may establish a "Modified Wetland Buffer Area" to be designated once development restrictions are specified within a Wetland Buffer Area. The purpose of the Modified Wetland Buffer Area is to avoid unnecessary development restrictions on properties not containing the wetland, even though those properties were initially in the Wetland Buffer Area, once protective restrictions for a wetland have been set in place. If a wetland is adequately protected from development, the Wetland Buffer Area should be modified to exclude those properties, development on which will not affect the wetland.

The City shall designate and zone all areas shown as wetlands or riparian corridor on the Coastal Wetlands Map as either Coastal Agriculture Exclusive, Coastal Natural Resource Protection, or Coastal Public Facility or with the :WCP Wetland and Creek Protection Combining Zone. Wetland Buffer Areas, and setback areas specifically required to protect the wetlands shall automatically carry the :WCP Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide.

Appendix E DIKING, DREDGING, FILLING, AND SHORELINE STRUCTURES

POLICY RECOMMENDATIONS

E-5 The City shall adopt a Coastal Wetlands Map showing the location of wetlands, riparian corridors and uplands within the Coastal Zone. All development within the areas identified on the map as wetland or riparian corridor shall require compliance with the [~~Coastal Wetlands Development Standards of~~] Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide.

E-7 The City shall establish a Wetlands Buffer Area to protect the areas shown as wetlands on the Coastal Wetlands Map. The purpose of the Wetland Buffer Area is to identify areas, in the vicinity of a wetland, that may need special development restrictions in order to protect the wetland.

All development within the buffer areas shall comply with the [~~Wetlands Buffer Area Development Standards of~~] Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide.

The City shall designate and zone all areas shown as wetlands or riparian corridor on the Coastal Wetlands Map as either Coastal Agriculture Exclusive, Coastal Natural Resource Protection, [~~or~~] Coastal Public Facility or with the :WCP Wetland and Creek Protection Combining Zone. Wetland Buffer Areas, and setback areas specifically required to protect the wetlands shall automatically carry the :WCP Wetland and Creek Protection Combining Zone standards set forth in the Coastal Land Use and Development Guide.

E-8 The City may establish a "Modified Wetland Buffer Area" to be designated once development restrictions are specified within a Wetland Buffer Area. The purpose of the Modified Wetland Buffer Area is to avoid unnecessary development restrictions, once protective restrictions for a wetland have been set in place, on property that would normally be located in the Wetland Buffer Area but for which the specified wetland protection renders development restrictions no longer necessary in the Modified Wetland Buffer Area.

Appendix F COMMERCIAL FISHING AND RECREATIONAL BOATING

[no changes to this Appendix]

Appendix G AGRICULTURE

EXISTING CONDITIONS

Definitions

[In the Open Space and Conservation Element of the Arcata General Plan, a definition of agricultural land is quoted from the *California State Supplement to Laws Relating to Conservation and Planning*:

"Agricultural land - land actively used for the purpose of producing an agricultural commodity for commercial purposes. Land may be considered to be actively used notwithstanding the fact that in the course of good agricultural practice it is permitted to lie idle for a period of up to one year-"]

The Open Space and Conservation Elements Technical Report, prepared for the 1989 Arcata General Plan revision of the Arcata General Plan Open Space and Conservation Element, describes agricultural land as follows:

"Agricultural land and soils are defined by the productivity of the soil and by the use (or availability to be used) of the land for producing food and fiber. Agricultural land also provides important visual open space."

The actual adopted General Plan policies focus on "agriculturally suitable land" which is identified (Arcata General Plan Chapter I. Urban Development and Community Design; Policy 2, footnote (1)) as being:

"Areas which are currently in agricultural production and/or underlain by soils of Grades 1 or 2 (above 60%) on the Storie Index."

The Element goes on to specify that (Chapter II. Conservation; Policy 3):

"Agriculturally suitable land should be preserved for agricultural use, wherever possible."

Coastal Conservancy Projects [sub-heading of "Other Recreational Activities"]

The Coastal Conservancy can assist in the preservation of agricultural lands and farmed wetlands by:

The selective acquisition of: (1) prime agricultural lands proposed for conversion to non-agricultural use to prevent urban intrusions into agricultural areas, to protect lands not now in agricultural production but needed to meet long-term food needs, and to assemble lands into parcels of economic size; and (2) farmed wetlands in order to promote continued agricultural use of farmed wetlands.

There are currently [no] only a few prime agricultural areas in Arcata's Coastal Zone that would qualify for Conservancy protection. However, there are a number of farmed wetland agricultural areas that would qualify for Conservancy Protection. There may also be prime agricultural areas in the City's Sphere of Influence that would qualify for Conservancy protection if they were ever annexed.

POLICY RECOMMENDATIONS

G-4. [beginning with the last sentence] The location of the wetlands shall be determined by the use of the adopted Coastal Wetlands Map except that it is not the intent of this policy to exclude, from regulation, wetlands not shown on the Coastal Wetlands Map.

Appendix H HAZARD AREAS

EXISTING CONDITIONS

The City of Arcata has adopted Seismic Safety and Public Safety Elements of the General Plan. These elements, adopted in December of 1975, included an analysis of the Arcata Coastal Zone. Because of significant new developments in the understanding of local geology, including mapping by the state of [a "Special Studies Zone"] an "earthquake fault zone" (pursuant to the Alquist-Priolo Earthquake Fault Zoning Act) where surface fault rupture is suspected, the City [is preparing] adopted a new Seismic Safety Element in 1987.

POLICY RECOMMENDATIONS

H-4. To protect structures and critical facilities in the Coastal Zone, and to provide protection of existing habitat values, the City shall encourage and promote flood protection and stormwater drainage management practices which [manage] address flooding problems and drainage on a watershed basis.

[(a) The City shall encourage the expansion of Janes Creek Flood Control District to include the watersheds of Janes, Jelly Giant, Gretzman, Campbell, and Beith Creeks; or shall otherwise coordinate with the County to alleviate existing flooding problems.]

(a) The City shall establish a Stormwater Utility to address stormwater drainage and flood control, including management of all waterways (creeks, sloughs, drainage ditches) and drainage structures City-wide.

(b) The [newly formed district of designated agency] stormwater master plan shall evaluate alternate flood control measures and select a flood control plan that improves drainage and minimizes potential hazards in the Coastal Zone.

Appendix J LOCATING AND PLANNING NEW DEVELOPMENT

POLICY RECOMMENDATIONS

J-6 The City shall adopt the following Coastal Land Use designation which shall serve as the basis for developing specific zoning districts. With the Exception of Forest Hillside and Residential Agriculture, these [These] are the same designations as used in the [existing] General Plan for areas not within the Coastal Zone. Note that the p/na (persons per net acre) figures are not intended be fixed numbers but indicate approximate numbers of persons each zone can be expected accommodate.

Residential

- | | |
|---|------------------------------|
| * Coastal Rural Residential | (up to [12] <u>6</u> p/na) |
| * Coastal Low Density Residential | (up to [24] <u>20</u> p/na) |
| * Coastal Medium Density Residential | (up to [45] <u>42</u> p/na) |
| * Coastal Medium-High Density Residential | (up to [75] <u>67</u> p/na) |
| * Coastal High Density Residential | (up to [115] <u>88</u> p/na) |

[p/na = persons per net acre]

Commercial

- * Coastal General Commercial
- * Coastal Central Business District Commercial (CBD)
- * Coastal Thoroughfare Commercial

Industrial

- * Coastal Industrial Commercial
- * Coastal Heavy Industrial

Public and Quasi-Public

- * Coastal Public Facility
- * Coastal Public Facility (Parks)
- * Coastal Natural Resource Protection

Agricultural

- * Coastal Agriculture Exclusive (60 ac. min. parcel area)

Appendix K COASTAL VISUAL RESOURCES AND SPECIAL COMMUNITIES

TABLE 1. SCENIC ROUTES WITHIN THE COASTAL ZONE [to be fully consistent with adopted Appendix K: Arcata's Scenic Routes of the Arcata General Plan, the following scenic route should read as follows:]

Highway 101 from Bayside Cut-off to the Mad River.	Landscaping, <u>agri- cultural land</u> .	Utilize natural vegeta- tion for landscaping. En- courage billboard removal and keep the area between the highway and the Bay open. <u>Maintain agricul- ral areas.</u>
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Appendix L PUBLIC WORKS

EXISTING CONDITIONS

Flood Control

Lands south and west of Arcata, as well as most of the East Bay plain, were originally salt marsh. Through diking and filling, these areas have been converted to agricultural, commercial, and residential uses. However, because of low elevations and high water table, flooding still occurs.

Dikes have been constructed along the perimeter of the Bay and the banks of Janes Creek/McDaniel Slough, Gannon Slough, and Jacoby Creek. The major work on these dikes was done in the early 1900's with minimal maintenance being provided by the City and members of the Reclamation District 768 in subsequent years.

The City once maintain[s]ed [its] permits to dredge Janes Creek north of 11th Street and all of Jolly Giant Creek[: Most] with most dredging occur[s]ing in the urban sections of Janes Creek. The City no longer dredges within the creek channels on a regular basis, and would obtain separate permits should dredging be necessary. No dredging [takes] took place on Jacoby Creek, which [is] has been allowed to flood adjacent agricultural lands.

Changes in the City's flood control practices [have been] were proposed, [and are diseussed] in a report titled "Initial Study for the Proposed Expansion of the Janes Creek Maintenance District and Related Projects." At the time this report was written, the Janes Creek Storm Maintenance District did not include area within the Coastal Zone.

The report, prepared by the Humboldt County Natural Resources Division, deals with the proposal to expand Janes Creek [Flood Control] Stormwater Drainage Maintenance District to include watersheds of Janes within the Coastal Zone, Jolly Giant, Grotzman, and Beith Creeks. The plan includes the following projects.

- Construct new and larger tidegates on McDaniel Slough where it empties into Humboldt Bay.
- Install a 10' x 7' concrete box culvert under 11th Street replacing the existing 6' arch culvert.
- Install a 72-inch culvert under 17th Street, and excavate a channel from Jolly Giant Creek to McDaniel Slough to divert peak flows from Jolly Giant Creek to McDaniel Slough.
- Excavate a channel from the southwest side of the Greenview Area Subdivision, west [of] to Liscomb Slough.
- Annual maintenance of Janes Creek/McDaniel Slough, Jolly Giant Creek, Grotzman Creek and Beith Creek has been estimated at \$30,000 per year. It involves maintaining channels by removal of silt and aquatic growth within the streams.

The purpose of the expansion proposal [is] was to give the Janes Creek Storm Maintenance District the authority and the tax base to finance storm maintenance projects within the watershed. The projects listed above are intended to speed storm waters through the City and adjacent areas with a minimum damage of property, and to reduce the necessity for emergency flood control measures.

Although the District was never expanded, the City continued with plans to implement the proposed projects.

Currently (1994), the City and the County are making plans to dissolve the Janes Creek Storm Management District. Only three parcels in the district remain in unincorporated area; once the City has annexed these parcels, the district will be dissolved and the remaining funds in the District account will transfer to the City for stormwater management.

In 1993, the City of Arcata created a Stormwater Utility to address stormwater drainage and flood control, including management of all waterways (creeks, sloughs, drainage ditches) and drainage structures City-wide. The Utility program includes establishing stormwater ordinances and regulations; a stormwater master plan; development of a drainage system inventory; and continuing an active program of public education and involvement.

The Stormwater Utility is currently (1994) preparing the drainage system inventory of all waterways and drainage structures affecting drainage within the City. The inventory is preparatory to hiring a consultant to develop a stormwater master plan.

In the meantime, the City will continue with projects proposed in the plan for the expansion of the Janes Creek Storm Drainage Maintenance District. [Expansion] Creation of the [flood control district] Stormwater Utility to manage drainage and control flooding on a watershed basis is environmentally sound and not in conflict with the

Coastal Act. However, some of the proposed projects associated with the [expansion] current district could severely alter wildlife habitat along McDaniel Slough.

Of the proposed projects, those likely to have the greatest effect on the natural environment are (1) enlarging of the tidegates on McDaniel Slough and (2) dredging of presently undredged stretches of creek. McDaniel Slough between the tidegates and Samoa Boulevard was flanked by freshwater marsh which fluctuates in size according to rainfall and streamflow. This marsh provides a nesting and feeding area for waterfowl. Enlarging the tidegates would reduce seasonal flooding in this area, and thereby reduce the extent of the marsh habitat.

Dredging is not proposed for the lower reaches of McDaniel Slough (this area is still unincorporated). According to the Natural Resources Division analysis, this would have changed the existing view of a freshwater marsh to one of a meandering slough. Dredging Janes Creek along West End Road (Arlington Way) is not expected to change existing views significantly.

Removing the tidegates at the mouth of McDaniel Slough was also discussed in this report, as well as the proposed County mitigation bank restoration proposed for the site. The following effects may occur if the tidegates are removed:

- The freshwater marsh would become an estuary.
- Slough water would become brackish and unsuitable for irrigation.
- Salt water intrusion into local wells could occur.
- Extensive dredging required for diking of the banks would damage the land/water interface.
- Anadromous salmonids (salmon and trout) would have free access to the upper sections of the stream.

POLICY RECOMMENDATIONS

L-1. To protect structures and critical facilities in the Coastal Zone, and to provide protection of existing habitat values, the City shall encourage and promote flood protection and stormwater drainage management practices which [manage] address flooding problems and drainage on a watershed basis.

[(a) The City shall encourage the expansion of Janes Creek Flood Control District to include the watersheds of Janes; Jelly Giant; Grotzman; Campbell; and Beith Creeks; or shall otherwise coordinate with the County to alleviate existing flooding problems.]

- (a) The City shall establish a Stormwater Utility to address stormwater drainage and flood control, including management of all waterways (creeks, sloughs, drainage ditches) and drainage structures City-wide.
- (b) The [newly formed district of designated agency] stormwater master plan shall evaluate alternate flood control measures and select a flood control plan that improves drainage and minimizes potential hazards in the Coastal Zone.

Appendix M INDUSTRIAL DEVELOPMENT

[no changes to this Appendix]

V. PUBLIC FACILITIES

This chapter presents policies and recommendations concerning the provision of public services and facilities to meet the demands of Arcata residents, and also to be mutually supportive of the other General Plan objectives. The successful implementation of Arcata's urban development objectives will depend, to a large extent, on the control exercised over the provision of public services and facilities by both the City of Arcata and Humboldt County. As prime shapers of urban development in the Planning Area, the City and County must cooperate on basic urban development objectives, especially, the delineation of urban and rural uses and the concomitant level of public services required, if many of the ideas contained in this Plan are to be realized.

POLICIES

- 1 The City should support a system of public services and facilities which will:
 - Support and encourage the intended patterns of land use, and discourage premature development or over-development in the absence of necessary municipal improvements;
 - Minimize adverse impact on the environment, and adverse fiscal, economic, and social impacts on the community;
 - Protect the health, safety and general welfare of Arcata residents by providing a level of service consistent with the needs of the individual neighborhoods and the community as a whole.

- 2 The City should support a balanced transportation system which increasingly emphasizes alternative transportation modes and de-emphasizes reliance on the private automobile.
- 3 The City should encourage the continued development and expansion of local and regional public transit systems which are responsive to the changing needs of Planning Area residents.
- 4 The City should ensure that Arcata's existing and proposed street alignment and highway network serve the functions they are intended to serve while protecting the character of Arcata's residential neighborhoods. High quality vistas from scenic routes in the Arcata Planning Area should be preserved. (see Appendix K).
- 5 The City should support bicycling and walking as significant transportation modes which promote personal health and recreational enjoyment while minimizing energy consumption and environmental degradation. The City should correct deficiencies in and expand the existing facilities, and should provide for the design of safe, convenient and attractive bicycle and pedestrian facilities in new public and private development whenever possible.
- 6 The City should program improvements to the water supply, sewage and flood control facilities to correct existing inadequacies, and to provide for the demonstrated long-term needs of Arcata residents, in a manner consistent with urban development policies and with the equitable distribution of costs. The City should encourage the conservation of fresh water and the reclamation and reuse of solid and liquid wastes.

7

The City and County should work toward common goals in guiding the future development of the Arcata area. The City should encourage the County to undertake the appropriate actions to achieve consistency between the Arcata General Plan and the Humboldt County Zoning Ordinance and Zoning District map. The City and County should adopt an urban services line, with the City responsible for the provision of urban level services, and with annexation established as a precondition to the extension of these services.

8

In order to maximize the use of existing school facilities and minimize the necessity for future facility construction, the City should encourage revisions in the alignment of school district boundaries to better reflect natural constraints and probable future urban growth patterns.

GENERAL PLAN MAP

The General Plan Map indicates the location of major existing and proposed public facilities. The streets and highways in Arcata are referred to in terms of their functional classifications;¹ these classifications are intended to provide a guide to implementing the General Plan proposals, and to provide the necessary information for obtaining state and federal funds earmarked for certain types of streets. For Arcata, the classifications are:

- Type I Principal Arterial: serving statewide and interstate travel.
 Freeway: U. S. Highway 101
 Non-freeway: State Route 255
- Local Arterial: serving intra-urban travel, such as Alliance Road.
- Collector: "collecting" traffic from neighborhoods and channeling it into the arterial system, such as Fickle Hill Road.

¹ See Opportunities, Constraints and Needs report, pp. V-7 and V-8.

Given the adequacy of existing school facilities and of other public buildings, such as the library, and the police and fire stations, no additional land is reserved on the General Plan Map for these uses. However, the quality and adequacy of these services should be continually evaluated, and the construction of new facilities should be programmed when the need is demonstrated.

IMPLEMENTATION

A Necessary improvements to Arcata's public services and facilities should be included within a Capital Improvements Program. Public funds allocated for transportation should emphasize an increasing commitment to public transit, bicycle facilities, and pedestrian facilities.

B The City should adopt the functional street and highway classification system, as indicated on the General Plan Map. The major circulation changes include:

- Foster Avenue Extension, east and west of Alliance Road. Foster Avenue will become the major carrier of east-west through-traffic between Spear Avenue and 14th Street, and will relieve Alliance Road of a limited amount of traffic. The development of Foster Avenue as a local arterial should be programed as a high priority item and should be integrated, if possible, with the redevelopment of the adjoining industrial areas to residential use, and with adequate right-of-way reserved for noise and visual buffers as well as for the inclusion of a bicycle path.
- West Arcata Extension, is intended to provide a westerly by-pass and to further reduce the traffic volume on Alliance Road south of Foster Avenue. The West Arcata Extension is thus indicated as a local arterial. The location of this arterial on the General Plan Map as an extension of V Street is only a tentative routing.

- C** The traffic volumes on local streets in residential areas should be continually monitored, particularly in central Arcata and in the south-of-campus area. As required, the City should initiate measures to discourage excessive through traffic; these efforts could include traffic control devices such as diverters, reduced speed limits, additional stop signs and similar considerations.
- D** The City should designate as scenic routes those roads and highways listed in Appendix K. The appendix also indicates the scenic features and desirable implementation recommendations associated with each scenic route.
- E** The City should program the undergrounding of utilities. Appendix L indicates the recommended utility undergrounding districts and schedule of priorities.
- F** The City should program future improvements to the Arcata and Mad River Transit System (A&MRTS), including:
- Support Facilities, such as the provision of rain shelters in major activity areas, and the introduction of specialized equipment, such as wheelchair lifts, if the demand warrants.
 - Expanded Service, including the purchase of additional vehicles, extended hours of operation, multiple use of equipment, and new routes, such as service to the industrial areas in northeast Arcata and possibly a free shuttle in the downtown area, if the demand warrants.
- G** The City should work closely with the Humboldt Transit Authority (HTA) in coordinating local and areawide public transit systems. The possibility of extending bus service to the Manila area, the opportunity for joint investment in support facilities, such as shelters at major centers of patronage serviced by both the A&MRTS and HTA, should be investigated.

H

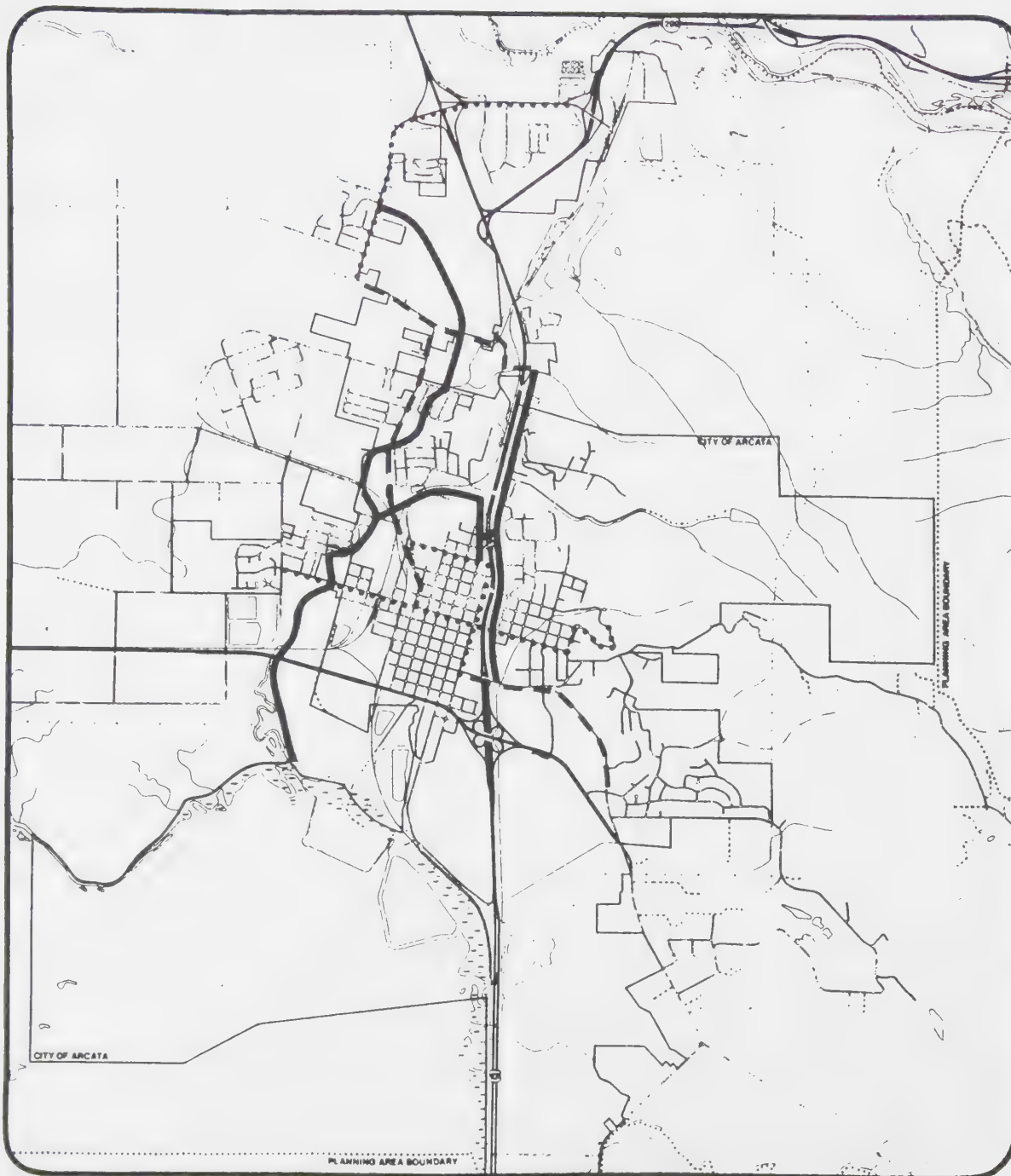
The City should evaluate the existing bicycle route plan for improvements to service, and should consider the provision of bicycle access within the Plaza area and along Arlington and West End Roads. (The Arcata bicycle route system is depicted on Map 3). Additionally, the City should take the following action:

Dedications. Require the construction of Class I Bicycle Route facilities¹ in the rights-of-way of new arterial and collector streets, and in major improvements thereto, as specified on the Bicycle Route System Map (Map 3). Amend the Planned Development District regulations of the Zoning Ordinance to require the dedication of bicycle route facilities appropriate to the size, density and location of the development. Investigate the feasibility of including bicycle route facilities within creekside areas.

Support Facilities and Services. Amend the Zoning Ordinance to require that sufficient bicycle storage facilities, as determined by the Planning Director, shall be provided in off-street parking areas in excess of a specified number of spaces. Assure the safety of the bicyclist, particularly along routes shared with automobile traffic, by performing the necessary maintenance, including the removal of hazardous obstructions, and by adding inducements to use, such as improved street lighting, where appropriate.

I The City should program new sidewalks and other pedestrian facilities in conjunction with improvements to the other transportation modes where possible, and with related City plans and programs, particularly neighborhood preservation efforts and improvements to the drainage system. The Arcata Pedestrian Plan should include:

¹A completely separated right-of-way designated for bicycle use.



MAP 3 BICYCLE ROUTE SYSTEM

CLASS I.

— COMPLETELY SEPARATED RIGHT-OF-WAY.

CLASS II.

- - PORTION OF THE STREET RIGHT-OF-WAY
DESIGNED FOR EXCLUSIVE OR SEMI-
EXCLUSIVE BICYCLE USE.

CLASS III.

..... STREET RIGHT-OF-WAY SIGNED FOR
BICYCLE TRAVEL.

CITY OF
ARCATA,
CALIFORNIA

GENERAL
PLAN
REVISION
PROGRAM
1975



DUNCAN & JONES
Urban & Environmental Planning Consultants

Schedule of Improvements. With priority attention and resources directed toward hazardous locations, especially areas which are subject to high automobile traffic volumes and which lack sidewalks or any street marking or signalization to assure the safety of the pedestrian. The City should work closely with the local elementary school districts in identifying intersections and other areas which are hazardous to children, and in providing safe crossings.

Together with specifying the timing and location of facilities, the schedule of improvements should delineate proposed financing, and the distribution of costs between the City and local property owners.

Evaluation of Existing Ordinances and Standards. The dimensional and construction requirements for sidewalks and accessways, and necessary provisions for handicapped persons, should be reviewed and recommendations for amendments to provide the City with more flexibility in addressing particular site and neighborhood conditions should be prepared.

J The City should adopt, with Humboldt County, the necessary powers to undertake the improvement of drainage and flood control in the Planning Area. Since the drainage problems in the Planning Area extend beyond the municipal limits, the City and County should either create a North Bay Drainage Maintenance District, coterminous with Planning Area boundaries, or adopt a joint-powers agreement to finance the necessary improvements. ~~Priority attention should be given to drainage improvements along the McDaniel Slough/Janes Creek system.~~ [This sentence deleted and replaced by measures in Chapter II. CONSERVATION, adopted 11/15/89 by Resolution 890-28.]

ARCATA CREEKS MANAGEMENT PLAN

Adopted - August 21, 1991

Introduction

Past and present land uses have radically altered the condition of Arcata's creeks from their original condition. Tidegates prevent or severely limit access for anadromous fish to all but Jacoby and Jolly Giant Creeks. Except for Jacoby Creek, the riparian forests have been completely removed from at least half of each stream channel. Pollutants from a variety of sources degrade the appearance and the health of the creeks. Fish are rarely observed. Through most of their lower reaches, creeks have been relegated to the status of "drainage ditches."

With good planning and management, Arcata's creeks can provide a wide range of unique benefits. Without good planning and management these benefits are lost and the costs associated with flood damage, erosion, sedimentation, and water pollution increase and are passed on to the community.

Purpose

The purpose of the Arcata Creeks Management Plan is to provide guidance for management of creeks that flow through Arcata in order to provide the fullest realization of the creeks' beneficial uses.

The beneficial uses of Arcata's creeks are as follows: flood control, fresh water habitat, riparian habitat, scenic enjoyment, water quality, education, public safety, fish habitat (fish spawning, fish migration), open space, recreation, marine habitat, and ground water recharge.

Opportunities to restore and protect Arcata's creeks fall into two broad categories:

1) New and Modified Development Along Creeks

The potential impacts of new development represent the most urgent set of issues. Therefore, this plan emphasizes recommendations for protection and management of undeveloped creek corridors and erosion and grading control ordinances.

In addition, the management plan gives guidance for the review of proposed new activities with potential impact on Creek Zones. For purposes of this plan, a Creek Zone is defined as follows:

- a) A Creek Zone shall be the area that is 25 feet outward from the top of bank, or the area bounded by the FEMA 100 year flood plain line whichever is

greater; except in no case will the creek zone on either side of a creek be wider than 100 feet from the average low flow line of that creek.

b) The top of the bank shall be the furthest break in slope of the bank to each side of a creek. Where the top of the bank is not clearly defined by an obvious break in slope, the City Engineer shall verify the top of the bank.

2) Existing Development and Practices in the Creek Zones

The management plan encourages the elimination, or minimization, of impact to creeks from existing uses and conditions through education, technical assistance, and in some cases, new ordinances. The City may also initiate projects and encourage voluntary restoration and enhancement of degraded stream resources.

The management of creeks in the Community Forest and Jacoby Creek Forest are described in the Forest Management Plan.

Arcata's Creeks

The creeks governed by this management plan are shown in Figure 1. These creeks are as follows: Janes Creek (including North Fork South Fork and McDaniels Slough), Sunset Creek, Jolly Giant Creek (including Butchers Slough), Campbell Creek, Fickle Hill Creek, Grotzman Creek, Beith Creek, Jacoby Creek and Washington Gulch. Also included are Liscom Slough, Mad River and Gannon Slough. The Arcata City Council may consider additions to this list at any time. Although the community is concerned about all of these bodies of water, it is recognized that the City does not have the authority to regulate activities outside the City limits.

A creek is a channel for water that flows from higher to lower points within a basin of land. These basins are known as watersheds. The condition of Arcata's creeks is a direct result of the conditions in their watersheds. Arcata's watershed boundaries are shown in Figure 2. Upstream or upslope activities can significantly affect the creek resources. Erosion control recommendations in this plan apply throughout all watersheds.

Implementation of this Management Plan

This plan sets forth policies and implementation measures. The implementation measures provide a checklist for measuring progress. Some implementation measures require immediate attention. Some implementation measures, such as fish habitat restoration, will be accomplished over a number of years; while others, such as creek maintenance, will be ongoing.

Overall, the implementation measures create a long list of "things to do." The greatest benefits will be obtained from this plan if responsibility for its implementation is assigned.

Urgent Recommendations:

(see Policies and Implementation section for additional details)

1. Establish creek zone combining districts in City's Land Use and Development Guide, to apply to creek zones which will require special management considerations.
2. Prepare and adopt an erosion control ordinance and amendments to the existing grading ordinance.
3. Install creek name signs at major points where city roads cross a creek to give immediate identity to Arcata's creeks.

POLICIES AND IMPLEMENTATION

Under each of the following topic headings, one or more policies are followed by implementation measures.

I. CREEK ZONE MANAGEMENT

1. **Policy:** The City shall manage creek zones to minimize risks from flood hazards while maximizing the benefits to the natural environment. It is noted that well managed creek zones provide adequate space for the movement of flood waters, fish and wildlife habitat, open space and recreational opportunities while minimizing public expense.

Implementation:

A. Establish Creek Zone combining districts in City's Land Use and Development Guide, to apply to creek zones which will require special management considerations. Include provisions to assure that each legally created lot within a stream zone contains a building site, unless Federal Emergency Management Agency requirements render the entire lot unbuildable.

B. The City's policy shall be that residential structures shall not be sited in the Creek Zone. An exception to the policy may be made only if a residence cannot be sited on a legally created parcel unless it is sited in the Creek Zone.

C. Establish a process for identifying creek zone boundaries on individual lots. Where necessary to analyze a proposed development project, require the applicant to provide top of bank or FEMA 100 year flood plain delineations.

D. Develop specific criteria for optimum stream channel configuration and capacity, habitat restoration, recreation, and access for creek zones.

E. Activities prohibited within Creek Zones will include:

1. Excavating or grading placing fill or debris;
2. Construction of any structure;
3. Removal, destruction or significant alteration of the natural vegetation; and
4. Fencing that crosses through a creek channel, that acts as a barrier to anadromous fish, or that acts as a collector of debris.

Exceptions to prohibited activities will include:

1. Construction or maintenance of utility lines crossing a creek zone;
2. Maintenance by a public agency or adoptors of recognized Adopt-A-Creek projects: including but not limited to removal of sediment buildup in creek beds for flood control purposes and removal of vegetation for flood control purposes;
3. Resource restoration projects;
4. Maintenance of existing roads, driveways and structures; or
5. Maintenance of existing trails or the construction of new foot trails as provided in the Park and Recreation Master Plan.
6. Agricultural operations.
7. Removal of hazardous trees.
8. Forest practices as permitted by the State of California.
9. Existing aggregate extraction concerns operating under permit from applicable agencies.
10. Construction of uses permitted by the base zoning, on legally created lots. Provided, however, that such construction would be required to meet all federal flood insurance requirements and provided that the ordinance implementing the Creeks Management Plan may specify the maximum buildable area on such lots.

F. Develop a program to acquire Creek Zone easements. Where possible, these easements are to be acquired at the time of new developments. As used in this plan, "Development" refers to any work for which discretionary land use approval, a grading permit or building permit is required by the City of Arcata, excluding the construction of a single family dwelling on an existing legally created parcel. Construction of a second unit shall be considered to be "Development" per this definition. In other cases they could be acquired through donations by land owners. Such easements should specify the activities which could

occur within the affected stream zones in order to support the purposes of this management plan.

G. Consider providing incentives for developers of parcels which may include:

- Density bonuses in exchange for Creek Zone maintenance or enhancement.
- Inclusion of Creek Zone areas within required open space for the development, thereby resulting in a net increase in permitted density. This could be done in one of the following ways:
 - By allowing the Creek Zone to serve as 100% of the required open space (rather than the current limit of 50% for multi-family projects); or
 - By calculating stream zone open space with a multiplier (e.g. 125%) to allow for a density bonus or an increase in the permitted floor area of a development.
 - By allowing for exceptions from solar design requirements for buildings where necessary to encourage the planting and maintenance of trees for riparian shading.

2. Policy: The City recognizes the importance of the remaining unculverted sections of creeks as providing the beneficial uses defined earlier. The City shall not approve any additional culverting of creeks unless such culverting is found to be necessary to control flooding or it is determined by the City Engineer that, without culverting, any development of properties adjacent to the creek is not possible.

Implementation:

A. Where a culvert with a cross-sectional area greater than 452 square inches is used to cross a creek, the invert of the pipe shall be placed below the silt line of the creek to a depth that is equal to 20% of the depth of the pipe.]

B. In reviewing plans for proposed creek crossings, the aesthetic benefits of bridges, when compared to culverts, will be considered.

II. FLOOD HAZARD MANAGEMENT

1. Policy: The City shall minimize damages and hazards due to flooding in accordance with FEMA (Federal Emergency Management Agency) guidelines.

Implementation:

A. At a minimum, new development shall be in accordance with FEMA requirements.

B. Identify appropriate overall flood hazard reduction strategy and action by the following:

a. Require developers to analyze and mitigate major increases in runoff from new development;

b. The City shall develop a regular stream channel inspection and maintenance schedule;

c. Any major modification or maintenance of channel capacity should be reviewed by the Planning Commission in a public hearing forum;

d. Identify potential flood levels as accurately as possible;

e. Analyze the hazards posed by a range of flood levels (such as 25, 50, 100 year return intervals);

f. Assess the costs and benefits of possible actions to avoid, reduce or mitigate those hazards. Actions may include:

1. Relocation or flood proofing of existing structures that are at risk;

2. Modification and maintenance of channel capacity;

3. Development of a regular stream channel inspection and maintenance schedule.

g. Requiring developers to analyze potential increases in runoff from new development.

h. Avoiding, or mitigating the impact of, the increased runoff from new development.

C. In the event of a flood: Map all high water lines along flooded watercourses, record observations of any problems created by the flooding, and assess the magnitude of the event.

III. EROSION CONTROL

1. Policy: The City shall minimize soil erosion throughout Arcata's watersheds.

Implementation:

- A. Prepare and adopt an erosion control ordinance and amendments to the existing grading ordinance.
- B. Continue to monitor all Timber Harvest Plans within Arcata's watersheds.
- C. Identify, analyze, prioritize and correct existing and potential erosion problem areas including: roads, trails, streambanks, and graded channels.

IV. SEDIMENTATION

1. **Policy:** To reduce the need for dredging and to protect instream habitat the City shall minimize the accumulation of sediment in Arcata's creeks.

Implementation:

- A. Identify, locate, quantify and correct sedimentation problems in Arcata's creeks.
- B. Assess the effectiveness of sediment traps and construct more sediment traps, where appropriate.
- C. Investigate opportunities to modify creeks to improve sediment routing consistent with other objectives of this plan.
- D. Encourage the reestablishment of a dense mature tree canopy over the creeks, in order to shade-out sediment trapping instream vegetation.
- E. Encourage livestock exclusion fencing on all creekside agricultural properties.

V. RIPARIAN VEGETATION

1. **Policy:** The City shall promote healthy riparian vegetation along Arcata's creeks. (Healthy riparian vegetation has trees and a variety of other native shrubs and plants which shade the creeks, stabilize the stream banks and filter sediment, maintain flood control and provide habitat and travel corridors for wildlife.)

Implementation:

- A. Identify and classify the condition of existing riparian vegetation.
- B. Establish programs to promote healthy riparian vegetation.

C. The City shall review development to minimize the disturbance of riparian vegetation.

2. Policy: The City shall promote restoration of degraded riparian vegetation within Arcata's Creek Zones.

Implementation:

D. Require restoration as a condition of approval for new development of parcels in Creek Zones.

E. In already-developed areas, promote and encourage reestablishment and protection of native riparian species.

F. Restoration and maintenance of riparian habitat shall integrate considerations for solar access and fire safety.

VI. FISH AND WILDLIFE

1. Policy: The City shall promote restoration of creeks to a healthy condition for fish and wildlife.

Implementation:

A. Conduct baseline habitat inventories and assessments.

B. Conduct surveys of abundance and distribution of fish and wildlife.

C. Identify restoration objectives for each creek.

D. Prepare habitat restoration plans for each creek.

E. Consider the feasibility of establishing a sportfishing management program which will include any fishing areas, stocking schedules and hatchery contributions and any refuge areas.

VII. WATER QUALITY

1. Policy: The City shall protect and improve stream water quality.

Implementation:

A. Establish monitoring program for stream water quality.

B. Identify point and non-point pollution sources.

C. Identify solutions to pollution problems by eliminating illegal sources where feasible and enforcing regulations.

D. Define proper emergency response by City and other agencies to be contacted.

VIII. WATER QUANTITY

1. Policy: The City shall protect instream flows.

Implementation:

A. Determine if actions are necessary to prevent future streamflow diversions.

IX. RECREATION AND PUBLIC ACCESS

1. Policy: The City shall make optimum use of Creek Zones for recreation and public access.

Implementation:

A. Identify, describe and make recommendations regarding:

1. Stream reaches suitable for public access/recreation;
2. Site-specific constraints and opportunities;
3. Relationship of specific sites to corridor as a whole;
4. Appropriate types of use;
5. Means to incorporate streamside public access/recreation into new subdivision plans.

B. Integrate recreational use with floodplain and habitat management considerations.

C. Make specific plans to acquire and develop the Janes Creek Linear Park and the Mad River Access as identified in the Master Plan of Parks and Recreation.

D. Coordinate stream zone management with recreational management at existing and future public facilities.

X. PUBLIC AWARENESS, EDUCATION AND INVOLVEMENT

1. Policy: The City shall promote public awareness of creek resources and their benefits.

Implementation:

A. Establish and maintain Adopt-a-Creek Program.

B. Provide clear identification of Arcata's creeks by installing creek name signs at all points where City roads cross a stream.

- C. Label all storm drains (determine color codes for each watershed).
- D. Paint street surfaces (i.e. with fish symbols) under which creeks flow.
- E. Produce an Arcata Creeks video.
- F. Continue to distribute the Stream Care Guide.
- G. Establish and maintain an Arcata natural history and restoration section in City library and Marsh Interpretive Center.
- H. Provide descriptive list of desirable plant species, creekside native plant landscaping information, including habitat and channel capacity and stability considerations.
- I. Publicize examples of urban riparian vegetation.
- J. Promote pollution control and alternatives to pollutants.
- K. Continue to promote the work of Humboldt State University and Arcata High School students in improving local creeks.

XI. DATA BASE

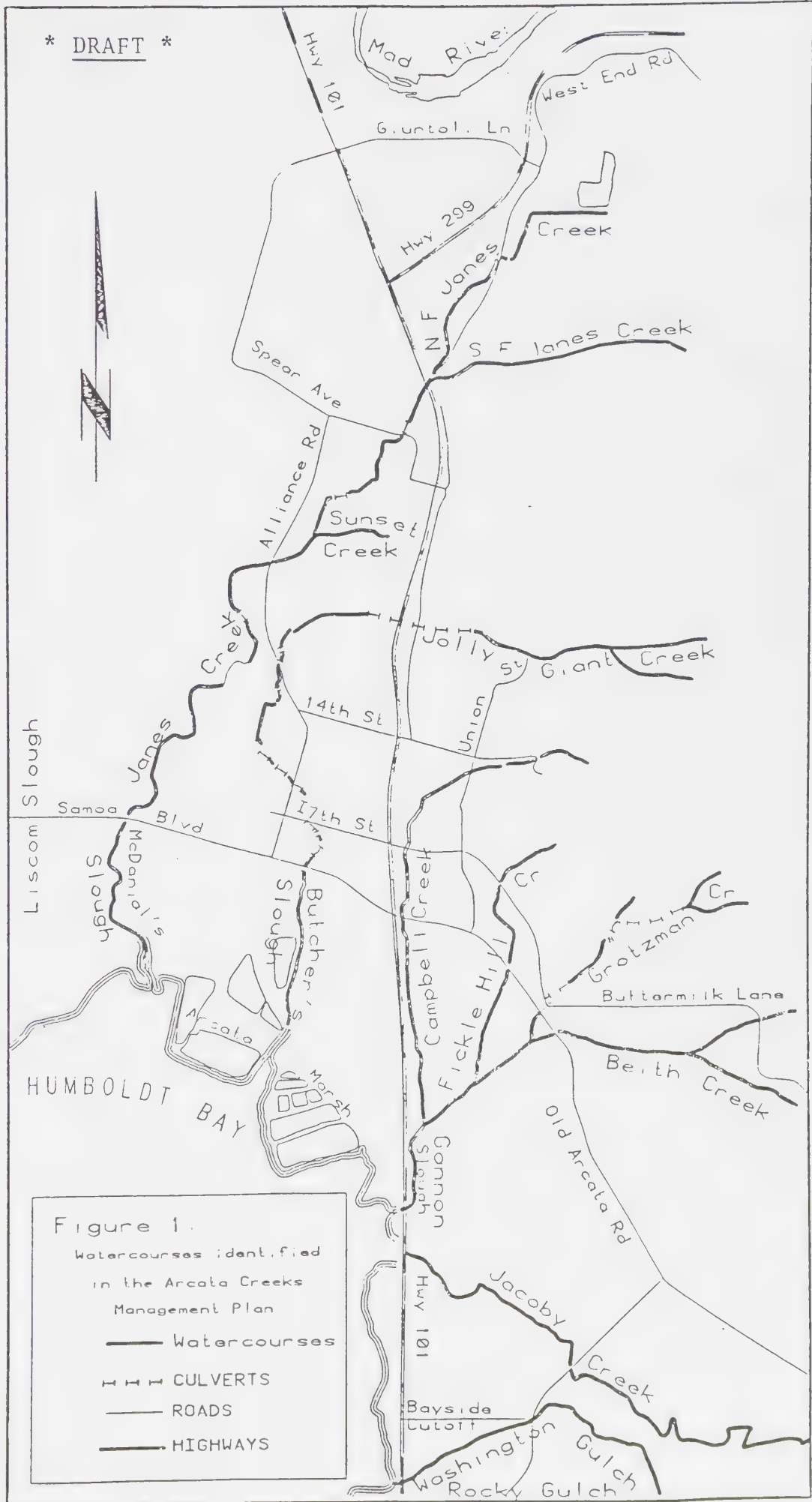
1. Policy: Maintain an Arcata creeks data base and reference collection.

Implementation:

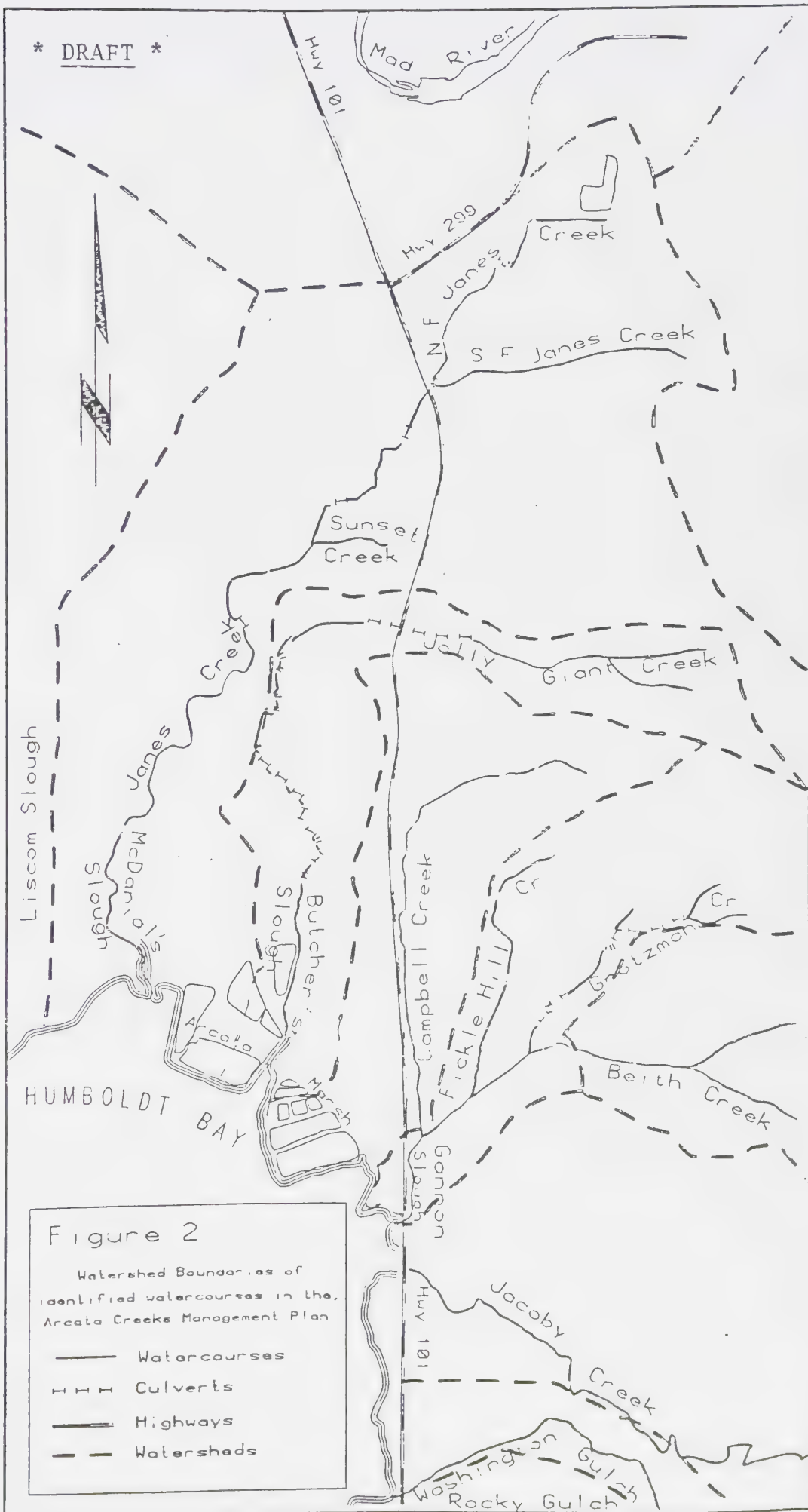
- A. Continue to locate and map open drainage channels within the City of Arcata.
- B. Utilize the City's Geographic Information System mapping program to record and display site-specific information.
- C. Establish on-going monitoring programs including streamflow, rainfall, sediment transport, water quality, channel morphology, and ecological characteristics. During and after large storms, every effort should be made to document the location of any flooding and other pertinent observations.

Vector; creekiii; 9/9/91

* DRAFT *



* DRAFT *



APPENDIX B: GENERAL PLAN LAND USE DESIGNATIONS

<u>Arcata Planning Area</u>					
Land Use		Acres ¹		Dwelling Units ³	
		Vacant	Total	Minimum Permitted	Maximum Permitted
Residential ²		127	862	979	1,914
	2.1 - 8.0	53	627	111	424
	8.1 - 15.0	37	156	299	555
	15.1 - 25.0	36	60	544	900
	25.1 - 35.0	1	19	25	35
Urban Expansion		43	43		
Commercial		30	152		
	Neighborhood	4	34		
	University	0.5	5		
	CBD	0.5	15		
	Thoroughfare	16.5	48		
	Heavy	9	51		
Industrial		127	615		

¹ For land uses in the Arcata vicinity, as depicted on Map 1.

² Each residential district permits a range of densities.

³ Dwelling units that can be constructed on existing vacant land.

Neighborhood Setting

- Is it particularly well-related to its site or to existing buildings?
- Does it express its function or method of construction well?
- Is the structure visible or accessible to the public?
- Is the present setting appropriate (trees, walls, yard, etc.)?
- Is the surrounding land use a significant factor in preservation of the structure?

APPENDIX C: CRITERIA FOR DESIGNATING HISTORIC STRUCTURES

Historical and Cultural Significance

- Is the building particularly representative of a distinct historical period, type, style, region, or way of life?
- Is it an example of a type of building which was once common but is now rare?
- Is the building of greater age than most of its kind?
- Is the building connected in any way with someone who was famous, important, or a local personality?
- Is the building connected with a business or use which was once common but is now rare?
- Is the architect or builder famous or well recognized?

Architectural Significance

- Are its construction materials used in an unusual, significant, or effective manner or style?
- Is the overall effect of the design of the structure beautiful, or are its details beautiful or unusual?
- Is the style of the building unusual for its area, for Arcata, for California, or is it unusual for any place?
- Does the building contain original materials or workmanship which can be valued in themselves?
- Is the method of construction employed or the floor plan used one which is unusual, ingenious, or significant?
- Is the structure especially well-preserved or could it be restored to its former condition?

¹This set of criteria is based upon the criteria contained in the following report: Historic Preservation Plan, Santa Cruz, California, Santa Cruz City Planning Department, 1974.

APPENDIX D: POPULATION PROJECTIONS

CITY OF ARCATA

AND

PLANNING AREA

<u>YEAR</u>	<u>CITY</u>	<u>PLANNING AREA</u>	<u>TOTAL</u>
1980	12,839	4,492	17,331
1981	13,800	3,567	17,367
1982	14,007	3,596	17,603
1983	14,217	3,625	17,842
1984	14,430	3,654	18,084
1985	14,646	3,683	18,329
1986	14,865	3,712	18,577
1987	15,088	3,742	18,830
1988	15,314	3,772	19,086
1989	15,437	3,802	19,239
1990	15,560	3,832	19,392
1991	15,684	3,863	19,547
1992	15,809	3,894	19,703
1993	15,935	3,925	19,860
1994	16,062	3,956	20,018
1995	16,190	3,988	20,178
1996	16,319	4,020	20,339
1997	16,449	4,052	20,501
1998	16,580	4,084	20,664
1999	16,713	4,117	20,830
2000	16,847	4,150	20,997

NOTES: 1. The 1980 base figure of 12,839 for the City was based on preliminary 1980 Census data. The 1980 base figure of 4,492 for the Planning Area was based on a housing unit count conducted in conjunction with the Parks and Recreation Master Plan.

2. The projections for the City assume a 1.5 percent yearly growth rate through 1988 and .8 percent thereafter. The Planning Area projections assume a yearly growth rate of .8 percent. The base rate of .8 percent was calculated by Duncan and Jones in the preparation of the City's General Plan.

APPENDIX E: DESIGN CRITERIA FOR NEW STRUCTURES IN HISTORIC DISTRICTS¹

The Design Assistance Committee should carefully review the designs of proposed new structures in Historic Districts. The purpose of this review should be to preserve the existing character of the neighborhood and to assure a pleasing transition between the old and the new. It should not be used to encourage a duplication of stereotypes or standard designs.

The Design Assistance Committee should consider the following elements in their review:

- The height and mass of new structures should be roughly consistent with those of adjacent buildings.
- New structures should not violate an established rhythm along the street; "rhythm" refers to the relationship of building masses to the spaces between them.
- Certain basic architectural design elements of the new structures could reflect those of the old. For example, the facade of a new structure might be consistent with a basic vertical or horizontal orientation of the facades of its neighbors; or a new structure could have the same roof shape as surrounding buildings.
- Landscape elements, such as walks, fences and planting masses should be encouraged to preserve or extend continuity between structures. Large trees and shrubs should be preserved.

These criteria should be considered as a supplement to the City of Arcata Ordinance establishing the Design Assistance Committee.

¹This set of criteria is based upon the criteria contained in the following reports: Historic Preservation Plan for the Central Area General Neighborhood Renewal Area, Savannah, Georgia, U. S. Department of Housing and Urban Development, April 1973; and Historic Preservation Plan, Santa Cruz, California, Santa Cruz City Planning Department, 1974.

APPENDIX G: PERFORMANCE STANDARDS FOR NEW INDUSTRIAL DEVELOPMENT

IMPACT	IMPACT ON ESTABLISHED RESIDENTIAL AREAS	IMPACT ON INDUSTRIAL AREAS AND OTHER NON-RESIDENTIAL AREAS
Noise	All noise generating operations shall be buffered so that they do not exceed the ambient noise level by more than 5 dB (A), or comprise over 70 dB (A) maximum in any residential area during daytime operations, or exceed 60 dB (A), L_{50} .	Mitigating measures shall be required where necessary to insure that noise generated by industrial operations does not exceed 70 dB (A) anywhere off the site premises, except under provisions of a temporary use permit.
Lights	No bright or flashing lights shall be visible in a residential district.	No restrictions.
Airborne Emissions	The Humboldt County Air Pollution Control District has established maximum permissible emission standards for all industry locating in its jurisdiction.	Same as residential.
Water Quality	The Humboldt Bay Wastewater Authority must evaluate liquid waste disposed of into its sewer system to determine its capacity to provide treatment. Industries not hooking up to the municipal sewer system are subject to quality standards administered by the North Coast Regional Water Quality Control Board.	Same as residential.

Traffic	New development must demonstrate that it will not substantially increase truck traffic on residential streets. Trucks over five tons shall not be permitted on local residential streets.	No restrictions.
Vibrations	No perceptible vibrations shall be permitted off the building site.	No perceptible vibrations shall be permitted which interfere with adjacent land uses.
Electronic	No visual or audible interference of radio or television reception shall be permitted by operations.	Same as residential.
Flammable	No operations involving the use or storage of flammable materials shall be permitted adjacent to any residential area.	All operations which involve storage, use or transport of flammable materials or gases must be conducted in a manner which meets with the approval of the Fire Chief; all facilities must contain such emergency protection and fire fighting equipment as are deemed necessary by the Fire Chief.

APPENDIX H: PROPOSED DEVELOPMENT REVIEW CRITERIA FOR URBAN EXPANSION AREAS

Each urban expansion area represents a unique combination of development opportunities and constraints which should be considered in the evaluation of proposals for their development. The following is a list of some of the factors which should be considered:

- Noise Problems. Where the urban expansion area is within 700 feet of a freeway, local arterial or other major source of noise, the appropriate noise mitigation measures should be required, and may include building setbacks, noise shielding, modifications to the street alignment, insulation of the dwelling units or combinations thereof.
- Flooding and Drainage Improvements. Urban expansion areas which are adjacent to or within flood prone areas, will require adequate drainage and channelization improvements prior to development.
- New Streets. In several areas, any proposed development should be closely coordinated with the design and construction of new streets. New alignments should provide access for alternative transportation modes, and should be designed to minimize the environmental and visual impact on proposed adjacent developments.
- Removal of Existing Uses. Areas which are currently developed in nonresidential uses will not be available for development until these other uses are removed. It is possible that these areas may be developed in stages, with the existing uses gradually phased out. The City should carefully evaluate the timing and character of proposed residential developments to ensure a smooth transition.
- Creekside Dedication. Where a creek runs through an urban expansion area, a natural vegetation buffer strip should be dedicated for open space as specified in the Coastal Environment Chapter, with plans included for pedestrian or bike trails where appropriate.

- Visual Buffers from Freeways and Industrial Areas. Some areas will require protection from visually disruptive scenes as the freeway, industrial uses, outdoor storage areas and parking lots. A protective screen of trees and shrubs should be required or other screening as may be appropriate.
- Liquefaction. The seismic safety study has determined that much of the Arcata Planning Area is subject to liquefaction. Areas which have a high potential for liquefaction will require geotechnical investigations before residential construction is permitted.
- Foundation Problems. If foundation construction problems exist in a portion of an urban expansion area, such as an improperly filled log pond, adequate engineering measures should be required, or development on this portion should be avoided.

Following is a matrix of characteristics and constraints which should be considered for the urban expansion areas:

Design Constraint	Urban Expansion Area ¹			
	1	2	3	4
Noise Problems		X	part	X
Flooding and Drainage Improvements		X	X	
New Streets			X	X
Removal of Existing Uses				X
Creekside Dedications			X	
Visual Buffers		X	X	X
Liquefaction	X	X	X	X
Foundation Problems				X

1. The numbers refer to the urban expansion areas as indicated on the General Plan Map, as amended.

APPENDIX J

URBAN SERVICES
BOUNDARY

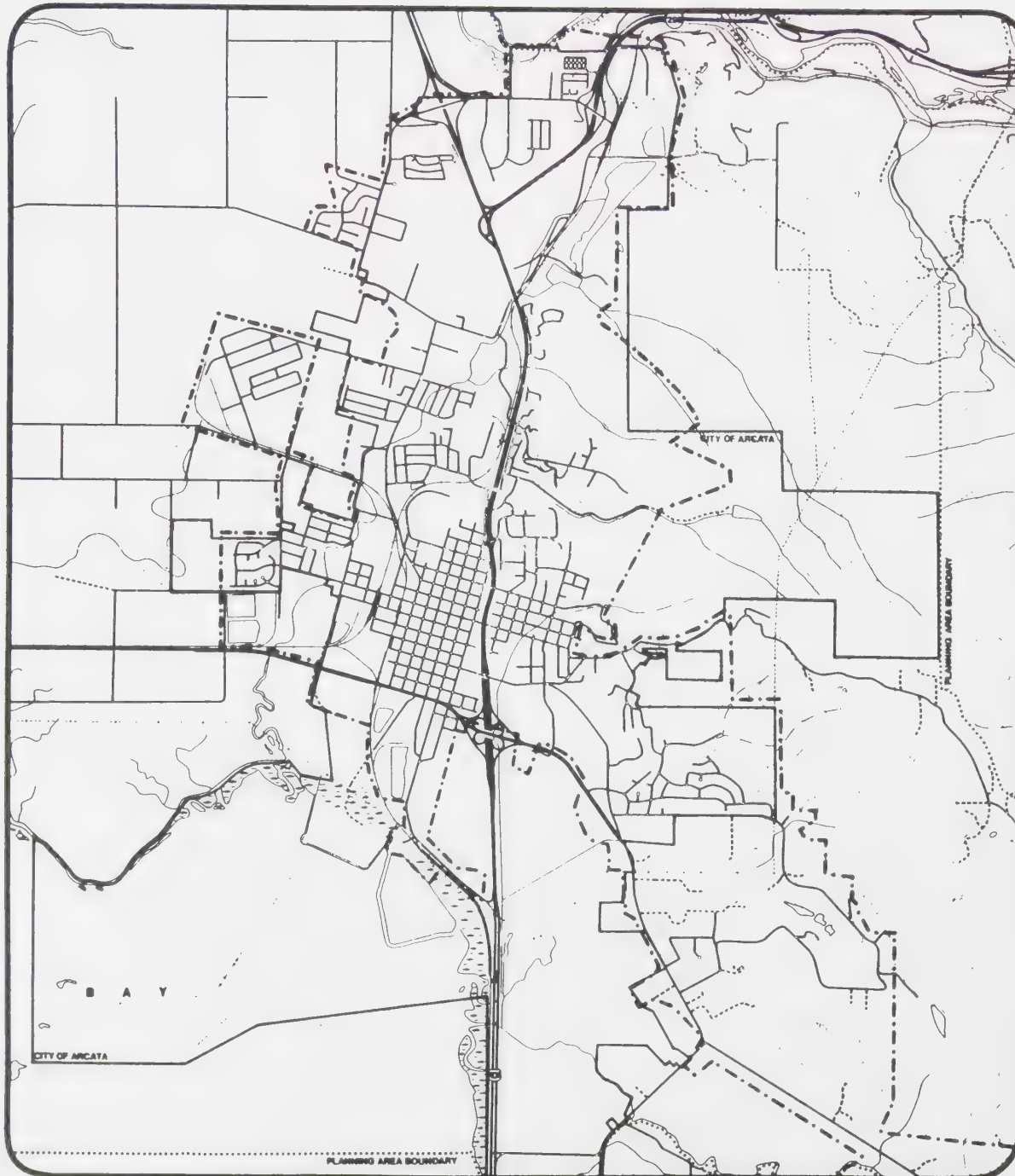
--- URBAN SERVICES BOUNDARY

— ARCATA CITY LIMITS

CITY OF
ARCATA,
CALIFORNIA

GENERAL
PLAN
FIVE YEAR
UPDATE

1980



APPENDIX K: ARCATA'S SCENIC ROUTES

** included in Arcata's Local Coastal Plan

ROUTE	SCENIC FEATURES	DESIREABLE IMPLEMENTATION
1. ** Old Arcata Road from the Seventh Street Overcrossing to Crescent Drive.	Pasture land, eucalyptus trees, all density deve- lopment, curving roads.	Development on the South- side of Old Arcata Road should be limited to single family homes and structures of low eleva- tion which would not block the view. Eucalyptus trees lining Old Arcata Road should be retained.
2. Fickle Hill Road from 11th Street east to planning	Panoramic view	Relocate utility poles. Vista point desirable.
3. ** Bayside Cut-off from Highway 101 to Old Arcata Road.	Pasture land.	Maintain agriculture.
4. ** Fourth Street (Samoa Boulevard) from Sunnybrae area north to town.	Pasture land.	Maintain agriculture to the Southwest.
5. Union Street between Center Street and Samoa Boulevard.	Pasture Land to south. Community Park.	Maintain agriculture.
6. ** Highway 255 from "V" Street to Manila.	Agriculture, dunes and view of the Bay.	Maintain agriculture.
7. Bayview and 11th	Panoramic View	Vista point desirable.

APPENDIX K: ARCATA'S SCENIC ROUTES
[continued]

ROUTE	SCENIC FEATURES	DESIREABLE IMPLEMENTATION
8. Alliance Road from 13th Street to Humboldt Plaza	Open area	Alleviate the development pressure.
9. ** Highway 101 from Bayside Cut-off to the Mad River.	Landscaping, agri- cultural land.	Utilize natural vegeta- tion for landscaping. En- courage billboard removal and keep the area between the highway and the Bay open. Maintain agricul- tural areas.
10. St. Louis Road to Alliance Road.	Variable terrain	Zone appropriate to terrain.
11. Jacoby Creek Road from Old Arcata Road east.	Forested Hillsides, pasture land, and rural-type develop- ment.	Maintain rural density and do not allow sizeable sub- divisions. Preserve agri- cultural area along Jacoby Creek.
12. Buttermilk Lane around Gold Course	Trees, golf course, open space, and large lots.	Golf Course Road should be widened.
13. J Street area from 7th Street to cemetery.	Historic homes	Zone for compatible uses.
14. Plaza Area	Plaza	Improve consistent with Main Street Program design goals; support Main Street Design Committee.
15. ** Janes Road from 11th Street to Simpson Mill.	Pasture land, pleasing view of homes.	Maintain agricultural to the west and residential to the east.

APPENDIX K: ARCATA'S SCENIC ROUTES
[continued]

ROUTE	SCENIC FEATURES	DESIREABLE IMPLEMENTATION
16. 14th Street from Union Street to Arcata Redwood Park.	Trees, curving roads, and the park.	None required.
17. Bayview Neighborhood.	Panoramic view	Vista point desireable. Maintain single-family development.
18. California Street Area.	Panoramic view	Maintain single-family development and Forest Hillside development stan- dards for steep areas.
19. Granite Avenue to Fickle Hill (Jolly Giant Creek Area).	Forest	Restrict parking from freeway, east.
20. Mad River Road	Agricultural area	Maintain agriculture.
21. Upper Bay Road	Agricultural area	Maintain agriculture.
22. West End Road, east of Arcata's West End Road industrial area.	River view and assorted vegetation.	Bicycle lane desireable. Maintain rural development and do not aid automobile access.
23. Buttermilk Lane, east of Sunnybrae Middle School (south of Butter- milk Lane.	Residential agricul- tural open space and rural-type residential development.	Maintain Residential Agri- culture zoning behind first row of lots on south side of Buttermilk Lane.

APPENDIX K: ARCATA'S SCENIC ROUTES
[continued]

ROUTE	SCENIC FEATURES	DESIREABLE IMPLEMENTATION
24. ** South "I" Street, south of Eureka Southern Railroad Crossing.	Various wetland types, pasture land.	Maintain Natural Resource Protection and agricul- tural to west.
25. ** South "G" Street south of "H" Street.	Wetland, wooded area west and south of South "G" Street.	Maintain Public Facility and Natural Resource Protection.
26. Q Street, north of 13th Street; Foster Avenue west of Q Street	Creamline Dairy (pasture) to the the east; agricultural land to the west; cypress windrow at St. Mary's School.	Maintain agricultural and windrow.

APPENDIX L: RECOMMENDED UTILITY UNDERGROUNDING DISTRICTS

Order of Priority	Location	Discussion
1.	Central Business District Area 2 ¹	Heavy use and high visibility wires
2.	H Street - 11th to 18th	North entrance to City
3.	4th Street - E Street to RR Crossing	South entrance to City
4.	G Street - 11th to 18th	Northbound exit to City
5.	Alliance Road Extension Foster to Westwood Court	Extension of existing district beyond Westwood Court becomes very expensive to homeowners and provides few benefits.
6.	Sunny Brae Shopping Centre	Heavy use area
7.	Central Business District Area 1 ¹	Wires mostly in alley areas minimum visibility
8.	Historic Homes Area	Visual improvement - very expensive to homeowners

¹ CBD Area 1 consists of the uses within one-half block of the Plaza; CBD Area 2 consists of the uses within one and one-half blocks of the Plaza, excluding CBD Area 1.

U.C. BERKELEY LIBRARIES



C124921607



LEGEND

RESIDENTIAL

- (F-H) Forest Hillside
- (R-E) Residential Estates
- (R-R) Rural Residential
- (R-L) Low Density Residential
- (R-M) Medium Density Residential
- (R-MH) Medium High Density Residential
- (R-H) High Density Residential

AGRICULTURE

- (A-E) Agriculture Exclusive
- (R-A) Residential Agriculture

COMMERCIAL

- (CBD) Central Business District
- (C-G) General Commercial
- (C-T) Thoroughfare Commercial

INDUSTRIAL

- (I-1) Light Industrial
- (I-2) Heavy Industrial

PUBLIC

- (P-F) Public Facility
- (P) Public Facility (Parks)
- (N-R) Natural Resource Protection

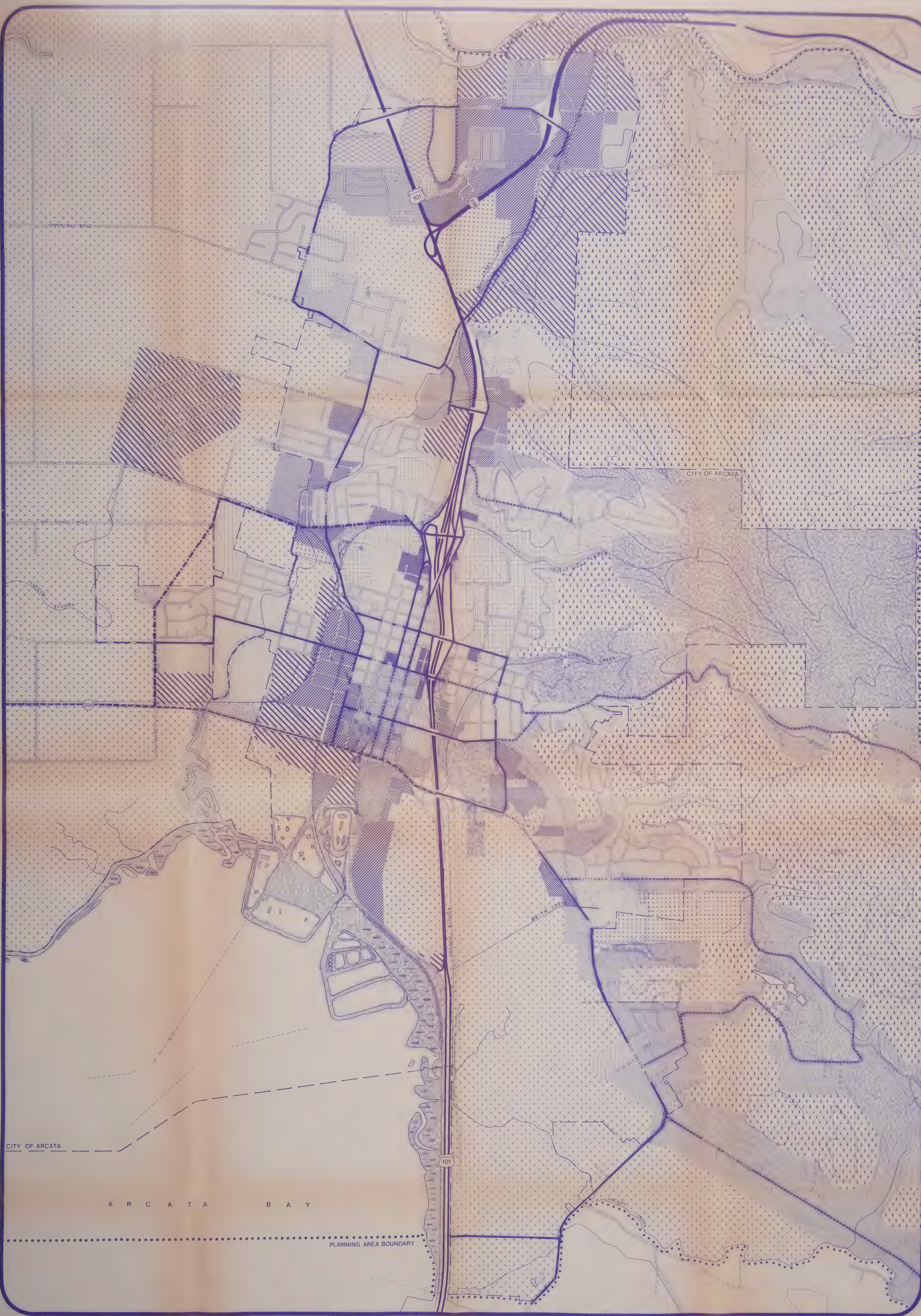
CIRCULATION

- Type I, Freeway
- Type I, Non-Freeway
- Local Arterial (Tentative Location)
- Collector
- Coastal Zone Boundary

CITY OF
ARCATA,
CALIFORNIA

COASTAL
GENERAL
PLAN
& ZONING
LAND
USE MAP





LEGEND

RESIDENTIAL

- (F-H) Forest Hillside
- (R-E) Residential Estates
- (R-R) Rural Residential
- (R-L) Low Density Residential
- (R-M) Medium Density Residential
- (R-H) High Density Residential

AGRICULTURE

- (A-E) Agriculture Exclusive
- (R-A) Residential Agriculture

COMMERCIAL

- (CBD) Central Business District
- (C-G) General Commercial
- (C-T) Thoroughfare Commercial

INDUSTRIAL

- (I-C) Industrial Commercial
- (I-H) Heavy Industrial

PUBLIC

- (P-F) Public Facility
- (P) Public Facility (Parks)
- (N-R) Natural Resource Protection

CIRCULATION

- Type I, Freeway
- Type I, Non-Freeway
- Local Arterial
- Local Arterial (Tentative Location)
- Collector

CITY OF
ARCATA,
CALIFORNIA



1985
GENERAL
PLAN
& ZONING
LAND
USE MAP



FAULT MAP

EXPLANATION

POTENTIALLY ACTIVE THRUST FAULT

BARBS ON UPPER PLATE

Barbs are solid on faults indicated on State of Calif. Special Studies Zones official map.

Barbs are open where compiled from other sources.

Faults are dotted where concealed.

BOUNDARY OF STATE OF CALIFORNIA SPECIAL STUDIES ZONES

THESE MAPS ARE INTENDED FOR GENERAL PLANNING PURPOSES ONLY AND IN NO WAY SUBSTITUTE FOR SITE SPECIFIC EVALUATIONS. SITE SPECIFIC EVALUATIONS MAY BE REQUIRED AT THE DISCRETION OF THE CITY BUILDING OFFICIAL REGARDLESS OF HAZARD AREA DESIGNATION.

REFERENCES USED TO COMPILE DATA :

CARYER, G.A., et. al., 1982, THE MAD RIVER FAULT AND LINEAMENT ZONE -- FINAL REPORT AND MAPS: Calif. Div. Mines and Geology, 20 p.

CARYER G.A., et. al., (in press), QUATERNARY GEOLOGY MAPS OF PORTIONS OF THE ARCATA NORTH, ARCATA SOUTH, KORBEL, and BLUE LAKE 7.5' QUADRANGLES, CDMG OPEN FILE REPORT.

STATE OF CALIFORNIA, 1983, SPECIAL STUDIES ZONES, ARCATA NORTH AND SOUTH 7.5 MINUTE QUADRANGLES.

NOTICE

Effective January 1, 1994, the name "Special Studies Zones" has been changed to "Earthquake Fault Zones" and Chap. 7.5, Div. 2, of the Public Resources code has been renamed the "Alquist-Priolo Earthquake Fault Zoning Act".

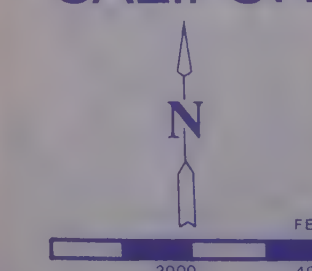
NGI NORTHERN GEOTECHNICAL INCORPORATED

JULY 1986

CITY OF
ARCATA,
CALIFORNIA

SEISMIC SAFETY ELEMENT,
1985 ARCATA GENERAL PLAN

PLATE A





LIQUEFACTION POTENTIAL MAP

EXPLANATION

- I - HIGH LIQUEFACTION HAZARD AREA
- II - MODERATE LIQUEFACTION HAZARD AREA
- III - LOW TO VERY LOW LIQUEFACTION HAZARD AREA

THESE MAPS ARE INTENDED FOR GENERAL PLANNING PURPOSES ONLY AND IN NO WAY SUBSTITUTE FOR SITE-SPECIFIC EVALUATIONS. ALL HAZARDS MAY NOT BE PORTRAYED ACCURATELY AT THIS SCALE. SITE SPECIFIC EVALUATIONS MAY BE REQUIRED AT THE DISCRETION OF THE CITY BUILDING OFFICIAL REGARDLESS OF HAZARD AREA DESIGNATION.

SOURCES USED TO COMPILE DATA:

SEED H.B., I.M. IDRIS, 1982, GROUND MOTIONS AND SOIL LIQUEFACTION DURING EARTHQUAKES, EARTHQUAKE ENGINEERING RESEARCH INSTITUTE MONOGRAPH SERIES, 134p.

UNITED STATES GEOLOGIC SURVEY, 1972, ARCATA NORTH AND ARCATA SOUTH 7.5 MINUTE QUADRANGLES, SCALE 1:24000.

VARIOUS STEREOGRAPHIC AERIAL PHOTOGRAPHS

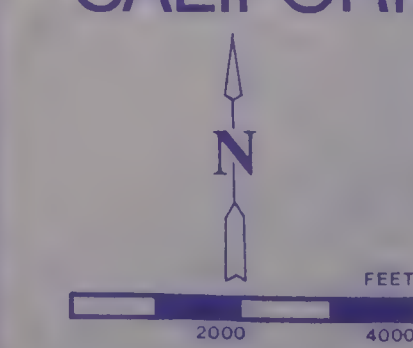


JULY 1986

CITY OF ARCATA, CALIFORNIA

SEISMIC SAFETY ELEMENT,
1985 ARCATA GENERAL PLAN

PLATE B





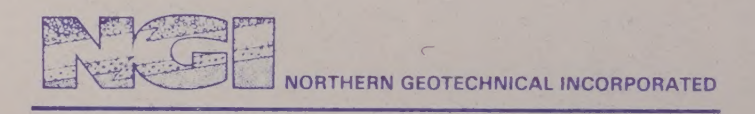
SLOPE STABILITY HAZARD MAP

EXPLANATION

- QIs - ACTIVE LANDSLIDE
- I - VERY HIGH SLOPE STABILITY HAZARD AREA
- II - HIGH SLOPE STABILITY HAZARD AREA
- III - MODERATE SLOPE STABILITY HAZARD AREA
- IV - LOW SLOPE STABILITY HAZARD AREA
- V - LANDSLIDE FREE AREA

THESE MAPS ARE INTENDED FOR GENERAL PLANNING PURPOSES ONLY AND IN NO WAY SUBSTITUTE FOR SITE-SPECIFIC EVALUATIONS. ALL HAZARDS MAY NOT BE PORTRAYED ACCURATELY AT THIS SCALE. SITE SPECIFIC EVALUATIONS MAY BE REQUIRED AT THE DISCRETION OF THE CITY BUILDING OFFICIAL REGARDLESS OF HAZARD AREA DESIGNATION.

SOURCES USED TO COMPILE DATA:
 UNITED STATES GEOLOGIC SURVEY, 1972, ARCATA NORTH AND ARCATA SOUTH 7.5' QUADRANGLE MAPS, SCALE 1:24000.
 VARIOUS STEREOGRAPHIC AERIAL PHOTOGRAPHS

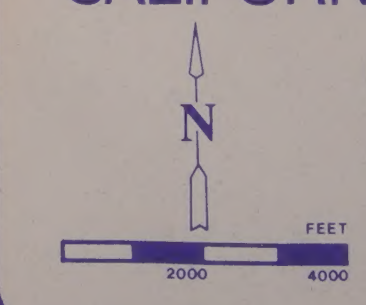


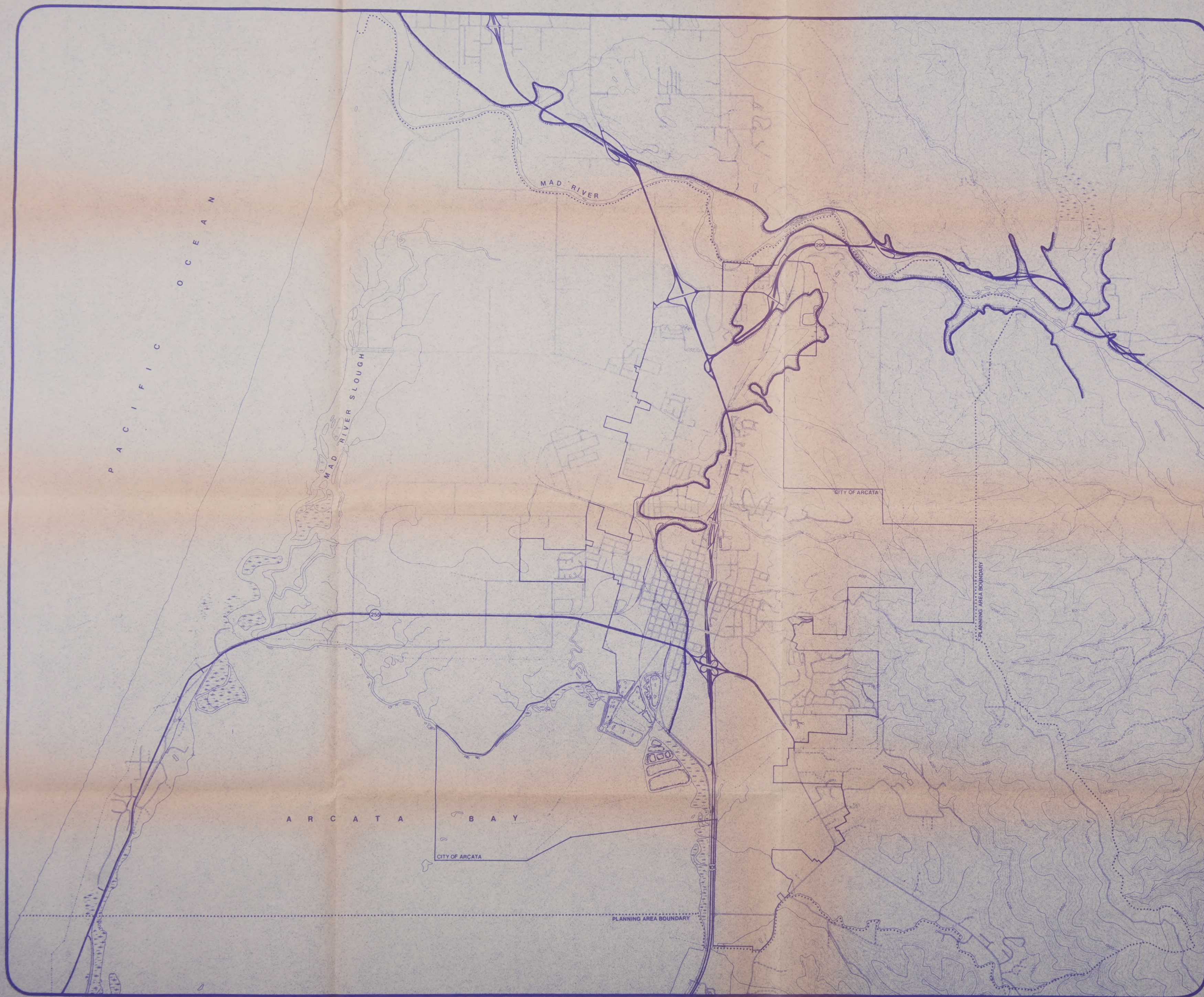
JULY 1986

CITY OF
 ARCATA,
 CALIFORNIA

SEISMIC SAFETY ELEMENT,
 1985 ARCATA GENERAL PLAN


PLATE C





MATTHEWS DAM FAILURE INUNDATION MAP

EXPLANATION

 ANTICIPATED MAXIMUM REACH OF FLOOD WATERS RESULTING FROM CATASTROPHIC FAILURE OF DAM

THESE MAPS ARE INTENDED FOR GENERAL PLANNING PURPOSES ONLY AND IN NO WAY SUBSTITUTE FOR SITE-SPECIFIC EVALUATIONS. ALL HAZARDS MAY NOT BE PORTRAYED ACCURATELY AT THIS SCALE. SITE SPECIFIC EVALUATIONS MAY BE REQUIRED AT THE DISCRETION OF THE CITY BUILDING OFFICIAL REGARDLESS OF HAZARD AREA DESIGNATION.

REFERENCES USED TO COMPILE DATA:

OFFICE OF EMERGENCY SERVICES, 1976, DAM FAILURE EVACUATION PLAN, ANNEX 1- MATTHEWS (RUTH) DAM, HUMBOLDT COUNTY CONTINGENCY PLAN, 45 PAGES WITH MAPS.

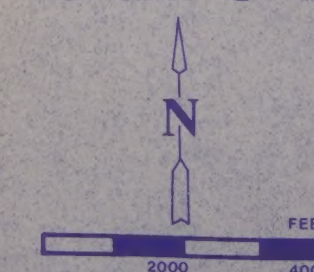
NGI NORTHERN GEOTECHNICAL INCORPORATED

JULY 1986

CITY OF
ARCATA,
CALIFORNIA

SEISMIC SAFETY ELEMENT,
1985 ARCATA GENERAL PLAN

PLATE D



CITY OF ARCATA

CITY LIMITS BOUNDARY MAP

SCALE: 1"=1000'

REVISED: MAY 1984



CHARLES SIMPSON ASSOCIATES
P.O. Box 4864
Arcata, CA 95521

Ldn NOISE CONTOURS
(in A-Weighted Decibels (dBA))

September 24, 1985

Drawn by

46 00 602
map 7

